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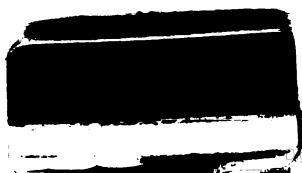
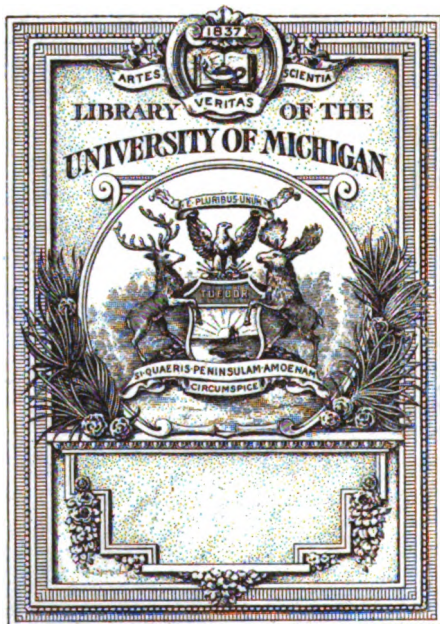
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THE
HALF-YEARLY ABSTRACT
OF THE
MEDICAL SCIENCES:

BEING
A DIGEST OF BRITISH AND CONTINENTAL MEDICINE,
AND OF
THE PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES.

Apparatu nobis opus est, et rebus exquisitis undique et collectis, arcessitis, comportatis.
CICERO.

EDITED BY
WILLIAM DOMETT STONE, M.D., F.R.C.S. (EXAM.)

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HALF-YEARLY ABSTRACT

OF

THE MEDICAL SCIENCES,

ETC.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, AND THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

ART. 1.—*On Scurvy.*

By M. LEVEN.

(*Gazette Hebdomadaire*, No. 9, 1871.)

THE following is the substance of a verbal communication made by M. Leven to the Academy of Medicine of Paris with regard to cases of scurvy observed during the siege:—

The disease appeared to have developed itself generally after about two months of bad nourishment and exposure to severe cold. It commenced with a feeling of extreme weakness in the lower extremities, an appearance of small violet patches on the skin, softening of the gums, and difficulty of breathing, which last constituted an important symptom. To these symptoms were soon added ecchymoses in the skin, chiefly in the vicinity of regions whose muscular contractions are the most active, as in the flexures of articulations. In addition there was a bruit with the second sound of the heart, accompanied by extreme weakness of the contractions of this organ, a cause of severe and prolonged syncope, which in some cases caused sudden death of the patient.

At the autopsy were found characteristic lesions, which explain the symptoms observed during life.

The chief morbid appearance was fatty degeneration of the muscles. The muscles first attacked were those of the sacro-lumbar masses (whence, during life, the incapacity of patients to keep themselves upright or to sit up in bed), those of the thigh and calves, and the muscular tissue of the heart. The heart was atrophied and reduced to two-thirds or one-half of its normal volume, and its muscle was of a yellowish color. Its muscular tissue thus changed, there was complete disappearance of the striated fibres, the place of which is occupied by fatty granulations.

The fatty degeneration attacks the viscera as well as the muscles, as, for example, the kidneys, the liver, and the lungs. The spleen is hypertrophied. It is a remarkable fact that the vessels remain free from change.

Contrary to what has been stated in all classical works, the blood did not present that difference and defibrination which have been mentioned as the chief characters of the disease. The cavities of the heart contained enormous clots. Hemorrhage during life was extremely rare.

When the disease terminates in recovery, the heart, which is the first organ to be affected, is the last which returns to its normal state. The bruit accompanying the second sound persists for a long time after the disappearance of the other symptoms.

To resume: the essential and characteristic alteration of the disease is not

defibrination of the blood, as has been constantly supposed. but a fatty degeneration of tissues or organs, principally the muscles, under the influence of inanition.

It is not, according to M. Leven, to the absence of fresh legumes or of a suitable vegetable diet that this disease ought to be attributed, but rather to insufficiency of nourishment joined to the prolonged influence of severe cold.

The treatment consists chiefly in suitable alimentation with regard both to quantity and quality. The acid juices, and that of lemon in particular, are, according to M. Leven, of very little importance in the treatment.

ART. 2.—On the Pathological Anatomy of Scurvy.¹

By M. HAYEM.

(*Gazette Hebdomadaire*, No. 9, 1871.)

Microscopical examination of the blood made in one case during life did not reveal any very appreciable morphological change. After death the blood is not diffuent; the heart and the large vessels contain inconsiderable post-mortem coagulations. Neither arterial nor venous obliterations were found by M. Hayem, but about the hemorrhagic infiltrations there was extensive stasis, involving a great number of capillaries and small veins.

The cutaneous hemorrhages comprise two very distinct forms: petechiæ and ecchymoses.

The former are presented under two different aspects. In one variety the effused blood is situated near or around the hair-bulbs, and forms small purpuric aureoles. The bulbs then present small, but more or less marked, papular projections, which remind one of lichen pilaris. In the other variety the petechiæ are constituted by irregular violet purpuric patches, with well-marked borders. The blood is here effused into the meshes of the dermis, without infiltration of the subcutaneous cellular tissue.

The ecchymoses, on the other hand, are due to blood infiltrations of the hypodermic cellulo-adipose tissue, at the level at which the fluid blood has penetrated the various layers of the skin over a variable extent. They present the tints of ordinary ecchymoses, and rest upon a diffuse indurated base.

The most considerable effusions of blood take place into the subcutaneous cellular tissue, which then sometimes acquires very great consistency, and produces a kind of hard and painful œdema.

The affected limbs, in addition to the ecchymosis, often present a special livid tint, which veils the hemorrhagic nature of the œdema. In some cases the skin presents dark marks or patches of cyanosis, which disappear under pressure.

The deep-seated cellular tissue of the affected limbs is also the seat of effusion of blood and of œdema.

In the skin and adipose tissue corresponding to those hemorrhages, one finds with the microscope an innumerable quantity of red globules compressed together. One observes, moreover, especially between the fibrous bundles of the dermis, a certain quantity of granulo-fatty and pigmentary corpuscles, and some more or less altered white globules.

The walls of the vessels are quite normal, except that one may find here and there in the walls of some capillaries a few fatty granulations.

The muscles always present important changes. Those of the affected limbs are the seat of numerous and vast infiltrations of blood, which, developed especially in the sub-aponeurotic interstitial tissue, insinuate themselves irregularly between the secondary bundles. There is, in addition, a kind of muscular œdema. Under the microscope a great number of fibres are found atrophied and filled with fine granulations; the majority are fatty.

The muscles of the trunk and limbs are also atrophied, and contain diffuse

¹ Communicated to the Société de Biologie, Paris.

blood infiltrations, at the level of which there is a kind of irritation of the muscular tissue, and with an often extremely abundant production of new elements, either in the fibres themselves or in the interstitial tissue.

The muscular alterations in scurvy represent a medium between the morbid changes found in febrile maladies, especially those of the severe pyrexia, and those found in cachexia. The fleshy fibres of the heart participate in the alterations of the general muscular system; they are more or less infiltrated with fatty and pigmentary granulations.

The serous membranes are often the seats of small suffusions of blood. In four autopsies of primary scurvy, one case was found of hemorrhagic meningitis; and, in one other, hemorrhagic pleurisy with hemorrhagic false membranes and a very abundant effusion of blood.

The stomach presented traces of recent subacute gastritis, and the intestine those of simple or ulcerative enteritis. In several cases was observed a pigmentary degeneration of the smooth muscular fibres of the gastric mucous membrane.

M. Hayem divides the cases which he observed into two categories. The former includes those in which the hemorrhages were primary and abundant, the disease then presenting the signs of classical scurvy. In the second are ranged those cases in which the hemorrhages were secondary, and almost always presented themselves under the appearance of a kind of cachectic purpura. These two morbid states, both due to the same external influences, depend on the same general change of the organism. In both kinds may be observed similar hemorrhages, with absence of vascular lesions; and, moreover, the secondary hemorrhages are often manifested, as in fatal cases of primary scurvy, in subjects suffering from severe affections of the digestive tube.

It seems, however, that true scurvy, as it has been described by authors, cannot be developed in subjects who are still vigorous or not weakened by an anterior disease. M. Hayem considers insufficient alimentation the principal cause of scorbutic affections. From this there results some morbid change in the blood, the nature of which is still unknown, and hemorrhages are then caused by the process of diapedesis.

The author concludes by bringing forward an hypothesis, according to which certain principles of mal-assimilation pass into the blood, and play an important rôle in the alteration of that fluid.

ART. 3.—*On the Examination of the Blood in Scurvy.*¹

By M. A. LABOULBÈNE.

(*Gazette Hebdomadaire*, No. 11, 1871.)

"The cases of scurvy which I have had opportunities of observing commenced their appearance at the end of the year 1870, when insufficient nourishment, absence of fresh vegetables, and prolonged cold had acted upon the population shut up in Paris during the siege. The characters of the disease both as to intensity and gravity were variable, and I never observed a single death from scurvy properly so called except in one subject already weakened by an anterior affection.

"The symptoms may be arranged in three categories or distinct groups:—

"1. There appeared in debilitated subjects, principally upon the lower extremities, dark spots. These spots were seated about the hair-bulbs. They were of a deep violet color, and did not disappear on digital pressure; other spots occupied the skin in the intervals of the hair-bulbs. They varied in dimensions from the diameter of a millimetre to the size of a lentil. These spots were distinctly ecchymotic, and disappeared in the course of a few days after having acquired brown and yellow tints. Several successive appearances

¹ Presented to the Académie des Sciences, by M. Ch. Robin.

were observed both on the limbs and the trunk. One recognizes in this brief description the signs of simple purpura.

"2. Patients both with and without purpura, after several days of painful stiffness in the limbs, observed large black patches surrounded by a ring of a lighter and yellowish tint. These ecchymoses were seated on the thighs and legs, rarely on the trunk. I have never observed them in the flexures of joints, but near muscular masses. Nodosities and a subcutaneous swelling accompanied these large patches, which were due to infiltrations of blood which had taken place in the muscular tissue and under the skin.

"3. Finally, coinciding with the appearance of purpura or the ecchymoses, more rarely in the isolated form, the gums of the patients, after having been painful and pruriginous, began to swell, and to form about the insertions of the teeth violet or dark blue tumors, both outwards towards the lips, and backwards towards the palate and the internal arch of the inferior maxilla. The breath was fetid, and the mastication either very painful or entirely prevented. Ulceration and hemorrhages attacked the fungous gums.

"An earthy tint of the skin, a feeling of shortness of breath and of extreme weakness, were remarked in all the patients, and likewise a soft murmur at the base of the heart with the first sound. *Finally a soft murmur with *frémissement* under the finger could be readily made out in the vessels of the neck; especially in the most marked cases of ecchymotic or gingival scurvy.

"I made a great number of examinations of the blood of the various scorbutic patients, and observed the following:—

"1. In simple cases of purpura the blood was usually quite normal. The red globules and the white globules or leucocytes maintained their appearance, their dimensions, and their ordinary relative quantities. Still I must remark that on several occasions I found a greater number of white globules or leucocytes in the field of the microscope than are to be met with in normal blood.

"2. In the patients who had large ecchymoses, with or without fungous gums, the blood was almost always pale and not so red as in non-scorbutic subjects on whom comparative examinations had been made. The number of white globules or leucocytes was increased, and this in a notable proportion.

"One fact upon which I ought to insist, was the presence of a notable and constant quantity of nuclear globules or leucocytes, sometimes disseminated, but more frequently united in irregular masses. In all the cases of scurvy and in patients of both sexes I found these anatomical elements increased in number.

"3. The blood taken from the gums presented the same characters as that from the finger, with the exception of the presence of vibriones from the mouth.

"In all my experiments, I took care, after having pricked the finger of the patient, to apply to the glass slide only the extremity of the drop thus obtained. I once found a notched condition of the red globules, but this I afterwards found by a second demonstrative observation was due to the perspiration of the patient, who had pressed his moist finger upon the flat glass slide.

"In the majority of observations which I made, on returning to the preparations which I had allowed to rest for a long time, I found in the field of the microscope very fine fibrillæ, due to the fibrinous coagulation of the blood. I conclude from those observations:—

"1. That in the blood of scorbutic patients the number of white globules or leucocytes increases in a notable proportion, both with respect to the ordinary and to the globular or nucleated leucocytes.

"2. That this increased proportion of the leucocytes does not seem to me to be sufficiently characteristic to be regarded as proper to scurvy, for it has been observed in a great number of pathological conditions and in various diseases, especially the constitutional affections.

"3. Fibrillar coagulation of the fibrin may be readily perceived in the blood of scorbutic patients."

ART. 4.—*On Scurvy Complicating Traumatic Lesions.*

By M. A. VERNEUIL.

(Gazette Hebdomadaire, No. 9, 1871.)

1. A wounded person, like any other individual subjected to its causes, may be attacked by scurvy, but the occurrence is rare.

2. It is a case of pure intercurrent, without any predisposition created by the wound, which indeed produces a kind of indirect immunity.

3. Scurvy occurring after a traumatic lesion, when reparation is of recent date or not yet perfected, may retard or destroy the reparative process.

4. A traumatic lesion attacking a scorbutic subject supplies a place of election for the most common local manifestation of this disease—external, interstitial, or internal hemorrhage.

5. One observes that in the wounded patient there is very little or no tendency to reparation; a wound may even be formed which presents all the specific characters of a spontaneous scorbutic ulcer, and which may become phagedenic.

6. Without prejudging the ulterior solutions which the histology of the vessels and the analysis of the blood may afford, one may say that scurvy, from a purely surgical point of view, does not necessarily give rise to spontaneous hæmostasis.

7. The coincidence of scurvy and of an exposed wound may render difficult the etiological determination of certain visceral lesions (hepatic steatosis, deposits of blood in the lungs and other organs).

The hemorrhagic tendency which is so marked in scurvy ought to direct special attention to the state of the liver.

ART. 5.—*The Modifications Produced on the Temperature of the Body by the Local Application of Cold and Heat.*¹

By FREDERICK BARHAM NUNNELEY, M.D., Assistant-Physician to the City of London Hospital for Diseases of the Chest.

(The Lancet, July 8.)

Experiments, detailed in the paper, have yielded the following results:—

1. That immersion of one extremity in iced water did not cause any alteration in the temperature of the other extremities or the body generally, unless the subject of experiment was in a state of more or less nervous exhaustion or there was decided coolness of the surrounding air, when a fall of temperature occurred.

2. That a slight rise of temperature in the body generally, and a more considerable one in the extremities, followed immersion of a hand or foot in water hotter than the blood, amounting under the tongue to about 1° F., and in the extremities from 1° to 3° F., above the normal standard.

3. And that if at this time any one of the extremities was put into cold water, a fall of temperature below the normal, slightly marked in the body generally, and much more so in the extremities, very shortly commenced. If the hand or foot was now withdrawn from the water, reaction became established, and the natural temperature was slowly attained.

Such results would appear to show that, for cold to act locally, a disturbance of the conditions which maintain the normal balance of temperature is necessary first of all—such as is caused by undue heat; and suggest the idea that these variations of temperature may be regarded in many respects as parallel to those attending a slight rigor, and that they are not always the result of reflex agency.

¹ Abstract of a Paper read at a Meeting of the Royal Medical and Chirurgical Society, on June 27.

ART. 6.—*On Leucocythemia.*

By HENRY EAMES, M.D.

(Dublin Quarterly Journal, May.)

Dr. Henry Eames reviews the opinions put forward by Virchow and Dr. Hughes Bennett as to the nature and mode of production of leucocythemia. He regards leucocythemia as an idiopathic affection, consisting not merely in an increase of the number of the white cells, but also in a proportionate decrease in the number of the red disks. He subjoins the history of a well-marked case.

R. W., æt. 35, admitted into Mercer's Hospital, April 14, 1871. Five years ago he was taken suddenly ill in the night with burning continuous pain in the left hypochondriac and lumbar regions. No rigors, thirst, or heat of surface. He was supposed to be passing a renal calculus, and was treated with opium and a warm bath, which gave temporary relief. But the pain returned and continued twenty-four hours without remission, and then gradually disappeared. After a time he got better, and was able to resume his work, but was in the habit of vomiting his food. In January, 1870, he caught cold. He had a cough, rusty-colored sputa, and oppressed breathing. The cough left him in three weeks; but he continued to lose strength and weight, and became pallid. After drinking ferruginous waters at Trefrew in Wales he was attacked with diarrhœa, and afterwards suffered severely from pain in the abdomen, which became swollen. A splenic tumor was diagnosed, and his blood under the microscope was found to be leucocythemic. His condition on admission was as follows: Skin yellowish, conjunctivæ clear, lungs and heart healthy; no murmur in veins or arteries; abdomen distended; girth round umbilicus thirty-six inches; midway between umbilicus and ensiform cartilage fifty-eight inches. A tumor, evidently splenic, extends two inches to the right of the umbilicus and touches the symphysis pubis. It can be plainly felt behind at the left side of the lumbar spine. The tumor is extremely hard. No splenic murmur; no glandular enlargement. Percussion dulness of liver is not increased. No ascites. Slight anasarca of feet and legs. Suffers from diarrhœa. Urine thirty-five ounces in twenty-four hours; sp. gr. 1015.7. Slightly acid. One thousand parts contain only 10.6 parts of urea, the lowest healthy standard being about 15 parts in 1000. The daily amount of urea excreted is 153.125 grs. The average amount for a healthy man of the same size on full diet is about 400 grs. in twenty-four hours. The amount of urea therefore is much diminished. Blood drawn and showed a large excess of white corpuscles. The relative proportion between the red and the white corpuscles was estimated at three of the former to one of the latter. "The white corpuscles are large, and nearly all of them multinuclear, thus bearing out Virchow's observations on splenic leucocythemia." Temperature normal. Mental powers uninjured. Suffers from weakness. Ophthalmoscopic examination by Dr. Fitzgerald: "The fundus oculi presents an orange tint; the margin of the right optic disk is ill-defined and striated; the retinal vessels were rather fainter than normal; no white spots or stripes along the sides of the vessels, which have been supposed to depend on the agglomeration of escaped white blood cells; no hemorrhagic effusion; the left optic disk well defined."

ART. 7.—*The Uses of the Uvula.*

By Sir DUNCAN GIBB, Bart., M.D.

(Medical Press and Circular, August 16.)

At the forty-first annual meeting of the British Association for the Advancement of Science, Sir Duncan Gibb read a paper on "The Uses of the Uvula." He commenced by saying that the true functional uses of the uvula had never before been wholly understood, and then entered into a description of its composition, situation, and relation to neighboring muscles. Anatomists describe the action

of the uvular muscle as an elevator, and therefore shortens the uvula. It is, however, a sentinel to the fauces, especially in the act of deglutition, for when any substance comes in contact with it, it excites the action of all the neighboring muscles until it is got rid of. But it possesses a function of not less importance in holding the soft palate tense and firm in the medial line against the wall of the pharynx during the act of deglutition itself, and thus prevents the passage upward of fluid or solid substances behind the nose. This was supported by experiments upon a person who had lost the bones of the nose, permitting a view of the action of the soft palate from its nasal aspect during deglutition, with or without food. Under either circumstance, a double arch was seen in the form of two convex swellings, held in a state of firm tension by the action of the uvula pressing down the centre of the soft palate, with its end resting flat against the wall of the pharynx. There was the *motor uvula* muscle situated superficially, like a distinct band, tied round the soft palate in its most important resisting part, to prevent the possibility of food passing upwards, and in this it was supported co-ordinately by all the neighboring muscles concerned in the act of deglutition. There also was a fact not previously known—viz., the action of the uvula as a point d'appui in holding the soft palate tense in the middle line against deglutition, at the same time that the muscle acted as a compressor of the soft palate itself. Its tension ceased the moment that the constrictors of the pharynx had fully exerted their influence over the substances swallowed. Whilst the uvula has its special uses in the act of deglutition, it exerts a not less decisive influence upon the voice when uttered in a very loud tone, or in singing the higher registers, in both sexes; then its character as a levator or shortener is exerted. If this power is impaired by removal of the muscular (not the membranous) end, then the singing powers are damaged. The author now described the appearance and action of the uvula as seen in singing the higher notes, its point becoming almost invisible, and the soft palate being drawn backwards and upwards, diminishing the space between it and the wall of the pharynx. The movements of the uvula are exceedingly rapid, and vary with the continuous or quavering character of the singing notes. In the shakes of the voice it is seen to be undergoing a series of short ups and downs, at every inspiration descending, and then rapidly ascending, and keeping up till the note, prolonged or otherwise, is finished. Some remarks were made upon elongation of the uvula and its effects, a distinction being made between its elongated membranous end and the true muscular tip, which should not be meddled with. Speech, the author said, was modulated by the soft palate and uvula, and the motor power of the latter is unquestionably exerted in pronouncing the letters K, Q, and X, with their associations, more especially the gutturals of the various languages. He summed up the uses of the uvula as follows: "1. It acts as a sentinel to the fauces in exciting the act of deglutition when anything has to be swallowed. 2. It compresses the soft palate and holds its posterior free border firmly against the wall of the pharynx in deglutition, so that nothing can pass upwards. 3. It modifies speech in the production of loud declamation and the guttural forms of language by lessening the pharyngo-nasal passage when it acts as an elevator. 4. Its elevating power is increased to the most extreme degree in the highest ranges of the singing voice, and is very moderately exerted in the lower ranges. 5. Therefore in its uses, deglutition and vocalization are the functions that are intimately associated with the uvula, and both become impaired more or less if it is destroyed, wholly removed, or seriously injured."

ART. 8.—*Sugar Formation in the Liver.*

By J. C. DALTON, M.D.

(*New York Medical Journal*, July.)

At a meeting of the New York Academy of Medicine, on June 15th. Prof. J. C. Dalton read a paper on "Sugar Formation in the Liver," of which the following is an abstract.

The present condition of our knowledge on the glycogenic function is as follows. It is universally known that the liver in healthy animals, when examined within a few minutes after death, contains an appreciable amount of glucose; that this glucose increases in quantity in the liver tissue after the circulation has ceased; that it will even reappear in the liver, separated from the body, after having been entirely washed out by a continued watery injection of the hepatic vessels; and that it is produced by a catalytic transformation of the amyloid substance or glycogene, under the influence of an animal ferment. All these facts, due to the remarkable discoveries of Bernard, have been abundantly confirmed by other experimenters, and are established in a manner which leaves no room for question. After detailing the experiments of Pavy in 1858, Harley in 1860, Meissner in 1862, Ritter in 1865, Schiff in 1866, Enlenberg in 1868, Prof. Flint, jun., in 1868, and Prof. Lusk in 1870, the speaker remarked as follows:—

“Two years ago I was desirous of ascertaining the exact time within which glucose would fail to appear in the liver extract examined by the ordinary method. For this purpose I experimented upon dogs, by cutting out a portion of the liver in the same manner as Prof. Flint had done, slicing it into boiling water, and making an extract of the coagulated liver tissue by rubbing it to a pulp in a mortar, and treating different portions by boiling with pure water, boiling with an excess of sulphate of soda, and lixiviating with cold water through finely powdered animal charcoal. In one instance the liver substance, immediately on being removed from the body, was crushed between two slabs of ground glass, rubbed to a pasty mass with animal charcoal, and lixiviated with cold water. The result was that, when the preliminary operations were completed in seventeen seconds and twenty-two seconds, the final extract of the liver tissue gave no reduction by the copper test; but at the end of fifty seconds it gave, rather slowly, a distinct though not abundant indication of sugar. In one instance different portions of the same liver were treated by boiling water, and afterwards with animal charcoal, at the end of seventeen seconds, and at the end of one, two, three, four, five, and seven minutes successively. In the first instance (seventeen seconds) there was no indication of sugar by Trommer's test; in the second (one minute), the sugar reaction was delicate but distinct. In the remaining five specimens the reaction, as appreciated by the eye, was constantly more and more marked. The appearance of the different test-tubes, after the completion of the experiment, was very striking. In the first, representing the liver extract at the end of seventeen seconds, the liquid remained perfectly blue and transparent; the remainder all showed a yellow or reddish color from the reduction of the copper, and varied only in the intensity of the hue and the quantity of deposit, which increased exactly in proportion to the time which had elapsed before the end of the operation.

“According to these results, therefore, fifty seconds was the shortest time within which the liver tissue, removed from the living animal, could be found to give indication of the presence of sugar.

“These experiments, however, were not fully satisfactory to me for several reasons. In the first place, when a substance like glucose invariably appears in an animal tissue after death with such rapidity that the interval is to be counted by seconds, it naturally suggests the propriety of extreme caution in adopting the conclusion that it was not there before, at least in minute quantity. Especially as nearly all observers are agreed that slight disturbances of the circulation or respiration, the struggles of the animal immediately before the operation, or the compressing effect of ligatures, will cause the appearance of glucose in the liver tissue at the instant of its removal, the necessity of such caution becomes very evident. Schiff states that in various animals, by simply compressing the abdominal aorta for ten minutes, or tying the principal blood-vessels of one limb, he has produced a condition of diabetes; and, on killing the animal, has found sugar present in the liver, though examined with all the requisite precautions. Even the use of ether is interdicted in experiments of this nature, owing to its liability to bring on a saccharine condition of the liver during life. According to the original observations of Bernard, the glucose produced in the liver was supposed to be constantly carried away by the blood of

the hepatic veins, to be replaced by a fresh supply of new formation; so that a comparatively large amount of sugar might be supplied by the liver in twenty-four hours, and yet only a small quantity be present in the organ at any one time. We all know that, in point of fact, the amount of sugar in the liver tissue increases after stoppage of the circulation, just as urea accumulates in the blood after removal of the kidneys, or carbonic acid in the lungs after the stoppage of respiration. The question is whether this increase of sugar is simply the accumulation of a substance already existing in small quantity, or a matter entirely of post-mortem production.

"It must be remembered, furthermore, that the chemical tests for glucose, as well as for other substances, have their limits in point of delicacy; and it is possible that they may fail to detect its presence, in some instances, simply on account of its minute quantity. There was a time when it was impossible to detect the presence of urea in healthy blood; and it was only after the requisite improvement in our chemical manipulations that this substance could be distinguished as a normal ingredient of the circulation. This consideration is of some importance in the present connection, because the quantity of liver tissue examined in the above experiments is of itself necessarily small. I have found it difficult to cut up in sufficiently thin pieces, and immerse in boiling water within the requisite time, more than about 140 grains of the liver tissue. If a much larger quantity than this be used, it requires more time for completing the operation, and gives rise to the presumption that the sugar afterwards found may have been produced by fermentation during the interval which has elapsed.

"For these reasons I was anxious, in the first place, to determine the exact limits of sensibility of the various tests for sugar, and the best manner of employing them; and, secondly, to contrive some plan by which a larger quantity of liver tissue might be used for experiment, without increasing the time consumed in the operation."

Prof. Dalton then described the subjoined various tests for the detection of sugar: *Trommer's test*, which is the most convenient and generally useful of all the means, and is quite sufficient for ordinary purposes; *Almen's bismuth solution*, and *Soleil's saccharometer*. The defects of each were noted, and before experimenting with *Fehling's solution*, he remarked that the polarizing apparatus cannot be relied upon for the detection of glucose in physiological investigations.

"By far the most sensitive test for glucose yet discovered is that by *Fehling's solution*, which is a double tartrate of potash and copper dissolved in an alkaline liquid, and containing, in a given volume, a definite quantity of the copper salt. The extreme sensibility of this solution may be well shown by using it in dilute form. . . .

"The most effectual way of using this test, for very small quantities of glucose, is to make the following mixture: *Fehling's solution*, one part; water, two parts. Of this mixture five cubic centimetres are placed in a narrow test-tube rather less than half an inch in diameter and about three and a half inches long. The tube should be placed in an oblique position, one inch in front of a background of black glass. It is fixed in this position by means of a cork collar, which embraces it at its upper extremity, and which is held by a metallic ring and screw attached to a wooden framework behind.

"The dilute copper solution is then raised to the boiling point by the flame of a spirit-lamp, care being taken not to apply the flame to the sides of the test-tube above the level of the liquid. When the copper solution has thus been brought thoroughly to ebullition, the boiling is allowed to subside, and the saccharine liquid is then immediately added, drop by drop, from another test-tube in which it has been already kept hot for the purpose.

"In this way the hot saccharine liquid, flowing down the inclined sides of the test-tube, mingles gently with the surface layer of the copper solution; and when reaction takes place, it is indicated by a thin yellow or orange-colored ring at the surface of the mixture, which contrasts distinctly with the clear blue color of the remainder. Boiling must not be continued after the addition of the saccharine liquid; for in that case the minute quantity of copper precipitate, which is perfectly distinct so long as it remains at rest, is broken up and

diffused by the mechanical agitation, and becomes quite imperceptible in the excess of blue liquid.

"The principal condition necessary for success, when testing by this method for sugar in minute quantity, is to have both liquids, at the moment of their admixture, as nearly as possible at the boiling-point without being disturbed by actual ebullition. . . .

"In every case there should be two test-tubes, containing equal quantities of the copper solution, placed side by side in a similar position. Both the fluids are to be treated in the same manner, excepting that the saccharine solution is added only to one of them—the other being used simply for comparison, in order to secure accuracy in the results. By this means the danger of mistake from spontaneous decomposition of the test-liquid is avoided.

"If Fehling's test be used in the manner now described, with a solution of glucose made in the proportion of 1 part per 10,000, three drops of the saccharine liquid added to the hot mixture will cause the appearance of a faint yellowish ring on the surface of the copper solution; but it is very delicate, and requires for its production every possible care in the manipulations. . . .

"If one cubic centimetre of water, containing $\frac{1}{1000}$ of a grain of glucose, be placed in a narrow test-tube, and one drop of Fehling's solution added, the reaction on boiling is prompt and very strong, easily visible in all lights and from a considerable distance.

"With a similar quantity of water containing $\frac{1}{1000}$ of a grain of glucose, and treated as before, the reaction is a little tardy in its appearance, but is perfectly distinct in character—most marked when viewed against a black ground. With weaker solutions, the reaction is less distinct, and soon becomes entirely imperceptible.

"This, accordingly, is about the limit of the practical operation of Fehling's test. In delicate examinations the degree of concentration is always of some importance; since the same quantity of glucose, dissolved in double the quantity of water, will often fail to give a reaction, though easily detected in the more concentrated form."

For the purpose of reducing the liver tissue to a state of fine comminution in the shortest possible time, Prof. Dalton employs a machine of simple construction, but very effective in its operation, known as the "crimping machine." (This apparatus was exhibited, and its effectiveness shown.)

When a portion of the liver substance is passed between the rollers of this machine, it is crushed at once into a state of far finer comminution than could be effected by any cutting process with knife and scissors. The greater part is reduced to the condition of a loose granular débris, and the whole of it is so bruised and lacerated that the contact of alcohol or boiling water will instantly affect its entire mass. By this means from 1500 to 2000 grains of the liver tissue may easily be separated from the body of the living animal, thoroughly comminuted and immersed in alcohol or boiling water, within the space of ten seconds.

The mode of operating for the removal of liver tissue from the living animal was then described.

After remaining for ten minutes in the alcohol, the liver tissue is pounded and ground to a pulp in a porcelain mortar, the pulp thoroughly mixed with the same alcohol, and the mixture then slowly percolated in a displacement apparatus. The moist liver tissue remaining in the apparatus is pressed in a linen bag, and the expressed liquid filtered and added to that which has already passed through by percolation.

The alcoholic solution is then mixed with an equal volume of water, the turbid mixture clarified in a displacement apparatus, with two ounces of coarsely powdered animal charcoal, and evaporated to dryness over the water-bath. The dry residue is finally dissolved in fifty cubic centimetres of water, again decolorized with one ounce of finely powdered animal charcoal, and filtered. The perfectly clear and colorless watery solution is now examined for sugar, by placing one cubic centimetre of the liquid in a narrow test-tube, against a black ground, adding one drop of Fehling's solution, and raising the mixture to the boiling-point.

In order to determine the proportion of sugar present in the liver tissue, one cubic centimetre of Fehling's solution, diluted with water to five times its volume, is placed in a large-sized test-tube, against a white ground, and raised to the boiling-point. While the ebullition continues, a measured quantity of the liver extract is slowly added, drop by drop, until all the copper oxide present has been precipitated, and the remaining liquid, when filtered, has no longer any blue color. The composition of Fehling's solution is such that, to accomplish this result with one cubic centimetre of the test-liquid, it requires exactly .077 of a grain of glucose, which quantity was accordingly present in the portion of liver extract employed. From this is calculated the amount of glucose in the whole fifty cubic centimetres of liver extract, representing a certain quantity of liver tissue; and thence the proportion of sugar per thousand parts in the liver tissue itself. The quantity of liver substance used in each experiment was ascertained by comparing the volume of the comminuted liver tissue and alcohol with that of another previously weighed portion of liver, treated in the same way and mixed with the same quantity of alcohol.

"It is essential that the final watery solution be absolutely clear and colorless. Otherwise, in testing for small quantities of glucose, it is sometimes difficult to be certain whether a genuine reduction has taken place or not; and especially in using the volumetric method for quantitative determination, the extraneous matters present interfere with the test, and prevent our fixing the precise point at which all the copper of the test-liquid has been reduced.

"I have now experimented in this manner upon twenty dogs. In four of the cases the method employed was that by boiling water; in the remaining sixteen cases, that by alcohol. The animals were examined four, eight, twelve, and twenty-four hours after feeding—the food consisting always of the fresh or cooked meat of the bullock's heart. The longest time which elapsed from the separation of the liver to its immersion in the alcohol or boiling water was thirteen seconds; the shortest time was six and one-quarter seconds. In every instance the final watery solution gave a decided and perfectly unmistakable sugar reaction; amply sufficient, in all cases in which it was attempted, to allow the quantitative determination of the glucose by the volumetric method. The proportion of glucose in 1000 parts of the liver tissue was thus ascertained in one-half the cases. In the remainder its presence only was determined, without regard to actual quantity. . . .

"There is no doubt that the quantity of glucose in the liver increases immediately after death; although, according to my experiments, this increase is not always so rapid as might be inferred from the general statements of some writers. . . ."

Prof. Dalton draws the following conclusions:—

"1. Sugar exists in the liver at the earliest period at which it is possible to examine the organs after its separation from the body of the living animal.

"2. The average quantity of sugar existing in the liver at this time is at least two and a half parts per thousand.

"3. The liver sugar thus found does not belong to the arterial blood with which the organ is supplied, but is a normal ingredient of the hepatic tissue."

Dr. Detmold inquired of Prof. Dalton how he accounted for the absence of sugar in the experiments of other men. Why did not Schiff find sugar? Were these physiologists as careful as they should have been?

Prof. Dalton replied that undoubtedly other experimenters took as much care as he did. At first he did not find sugar, but it was due to the quantity of liver tissue employed. About two hundred grains of liver tissue is the right quantity for experiments. The liver is thoroughly comminuted by the "crimping machine," and complete percolation follows—only sugar being taken out.

He also said that another great reason of his success was the employment of a large quantity of finely powdered animal charcoal, rendering a clear watery solution.

ART. 9.—*On Dextral Pre-eminence.*¹

By WILLIAM OGLE, M.D., Assistant-Physician to St. George's Hospital.

(The Lancet, July 8.)

1. After a very brief account of the chief explanations which have been given of right-handedness, the author advances numerous arguments against the most generally accepted doctrine that it is based on conventional agreement, enforced by educational influence, and has no natural foundation in our physical conformation. Of these arguments the following are the chief. The preferential use of one side is not limited to the arm, but extends to the leg, which is not subjected to education as the arm. The tendency to use one side preferentially manifests itself before education begins, and often persists in spite of the efforts made to overcome it. Left-handedness resembles many physical malformations in being hereditary, in running in families, and in attaching itself rather to the male sex than to the female. Statistics are given of its relative frequency in the two sexes. Men are not the only animals with a tendency to use one side preferentially. The author gives an account of his observations in this matter on monkeys and on parrots.

2. Having shown that there must be some one or other structural foundation for right-handedness, the author next considers what this may be. He shows that in right-handed persons the left hemisphere is proved to be pre-eminent over the right by its lodging the faculties concerned in speech, &c.; and that in left-handed persons the right hemisphere has a similar superiority. This latter statement, the probability of which was suggested by the author several years ago (*St. George's Hospital Reports*, vol. ii. 1867), is supported by three cases of aphasia in left-handed persons, accompanied by left hemiplegia, which the author has himself seen, and a fourth recorded by Dr. Jackson. So the right- and left-handedness would seem doubtless to depend on a natural predominance of the left and of the right hemispheres respectively.

3. Inquiry is then made whether any structural differences between the two hemispheres can be detected; and it is shown that while the left is the more complex in right-handed persons, the contrary is the case in left-handed individuals. This latter statement is based on the examination of the brain in two left-handed subjects. The specimens were exhibited, and also tracings of them by Dr. Broadbent.

4. Finally, the question is considered—What is the cause of the greater development, as a rule, of the left hemisphere? It is argued that it depends probably on the left hemisphere receiving a freer supply of blood than the right one. The results of the author's observations as to the relative sizes of the arteries on the two sides of the neck are given; from which it appears that the left arteries are, as a rule, slightly larger than the right ones. It is also shown that, independently of the size of the vessels, the stream of blood is less hindered on the left side than on the right. Lastly, it is shown that this explanation is consistent with, and corroborated by, the peculiarities of the cerebral blood-supply in those other animals which, like man, manifest a tendency to use one side preferentially to the other—such as parrots.

ART. 10.—*The Treatment of Hyperpyrexia, as Illustrated in Acute Rheumatism, by means of Cold Applications Externally.*²

By WILSON FOX, M.D.

(British Medical Journal, August 26.)

The author related two cases, in which entire recovery, under the use of the cold bath, ensued, after the temperature in one had attained the height of 110°,

¹ Abstract of a Paper read at a Meeting of the Royal Medical and Chirurgical Society, June 27.

² Abstract of a Paper read at the 39th Annual Meeting of the British Medical Association.

in the latter of $107^{\circ}.3$. In the former case there was deep coma; in the latter, delirium. The nervous symptoms disappeared in both after the first reduction of temperature. In the first case moderate pericarditis was present; in the latter, a very large pericardial effusion, and also a double pleuro-pneumonia, prior to the rise of temperature and the employment of the cold applications. In the first case the pyrexia, prior to the sudden increase of its intensity, had been very moderate, the temperature not exceeding 102° ; but on the fourteenth day of illness the temperature rose within nine hours from 102° to $106^{\circ}.4$. Two drachms of quinine, given within four hours in divided doses of a scruple, failed to check the rise of temperature, which within twelve hours had amounted to eight degrees. Ice-water poured over the body, and ice applied to the chest, abdomen, and spine, reduced the temperature in the rectum within half an hour to $103^{\circ}.6$, and a subsequent further fall took place during the succeeding hour, when the patient was in bed wrapped in blankets, to $97^{\circ}.4$ —there having thus ensued a total reduction of the temperature in the rectum of $12^{\circ}.4$ within an hour and a half, the patient having been only exposed to the cold during half an hour. A gradual rise of temperature of $7^{\circ}.6$, occupying twelve hours, then ensued, the temperature reaching 105° . A bath of twenty minutes' duration (temperature 64°) reduced the temperature in the rectum $1^{\circ}.1$; but the fall continued after the removal from the bath for another hour, with a total reduction of the temperature in the rectum within this time by $5^{\circ}.6$. A tendency to a rise of temperature persisted during two days longer; but was kept, by means of an ice-bag more or less continuously applied to the spine, below 103° . The treatment by cold was in this case maintained during four days. The fever lasted to the seventh day after the commencement of the treatment, which, however, was not maintained during the last three days. In the latter period the patient had a return of perspiration and of the pains in the joints. She had some bronchitis in the first days of the treatment by cold, which greatly improved while this was persisted in. The pericardial effusion diminished while the cold was being applied, and subsequently entirely disappeared. The patient was discharged thirty days after the intense pyrexia, and forty-four days after the commencement of the disease. In the second case, the temperature before the hyperpyrexial attack had been higher, sometimes reaching 104° . The patient had extensive pericardial effusion and a double pleuro-pneumonia prior to the attack and before the application of the cold. Delirium set in, with a rise of temperature to $107^{\circ}.3$ on the seventeenth day of the disease and the sixth day in hospital. Half a drachm of quinine, given in a single dose, failed to check the rise of temperature. A bath of twenty minutes' duration, at a temperature of 86° , reduced the temperature in the rectum by $4^{\circ}.2$. A further fall followed removal from the bath, until the total reduction within an hour amounted to $9^{\circ}.5$. The pyrexia in this case was, however, more obstinate than in the last. Cold applications, consisting of baths, ice to the spine, and packing in wet sheets wrung out of iced water and changed every half hour or twenty minutes, were continued during seven days. The fever lasted in a continuous form until the twenty-fifth day after the extreme pyrexia and the forty-third of the disease, when it became normal; but occasional exacerbations occurred until the sixty-first day of the disease. The double pleuro-pneumonia resolved during the seven days, while the patient was being treated by the cold applications. The pericardial effusion, which at one time had reached the clavicle, greatly diminished, and subsequently disappeared, though some enlargement of the heart remained. While the fever was still present, sweating and pain in the joints returned with some severity. In commenting on these cases, the author remarked that recovery in acute rheumatism rarely if ever took place after the temperature had risen above 106° , and that in all the recorded cases death occurred within a few hours after 107° had been attained. No other treatment had been shown to be capable of averting the rapid rise of temperature which had taken place in different cases after bleeding, and the administration of digitalis, veratria, opium, calomel and opium, and large doses of quinine. He considered, therefore, that the present plan was the only one which, as far as was yet known, could be pursued with success. Of the methods employed for the

reduction of temperature, total immersion in a bath of from 60° to 80° was the most efficacious; but it required caution, as the fall of temperature persisted long after the patient's removal from it. The wet pack, frequently changed, stood next in order of utility; the ice-bag to the spine had least power, but might be used when the rise of temperature was slow. The author considered that the period when the treatment should be commenced was when the temperature exceeded 106°. This treatment was not to be considered as a cure for acute rheumatism, but only as a means for averting a dangerous complication. The rheumatic joint-affection returned in both these cases after the pyrexia had subsided. He believed, however, that no complications should interfere with its employment under the circumstances indicated; and in both these cases not only were no complications to be attributed to the treatment, but severe visceral inflammation subsided while it was continued. Brandy was given largely in both these cases; but the author did not consider that this would be necessary in all, but each case must be treated according to its individual indications. The author thought that other medicinal interference, unless specially indicated, had better be discontinued during the employment of the cold. It was probable that this treatment would be applicable to the same phenomenon occurring in the whole class of acute febrile disorders, in nearly all of which it might be an occasional complication, as in typhoid and typhus fevers, scarlatina, tubercular meningitis, pyæmia, and in sunstroke—in which latter disease the cold affusion had already been employed with advantage.

ART. 11.—*The Functions of the Spleen.*

By Professor MOSLER, of Greifswald.

(*Centralblatt Med. Wiss.*, No. 19, 1871.)

Prof. Mosler gives the following as the results of thirty extirpations of the spleen:—

1. The spleen is not absolutely needful to the life of the animal.
2. After extirpation, as well as after artificial atrophy of the spleen, its function is taken up by the remaining lymphatic organs. The medulla of the bones appears to have an important rôle to perform in this respect. In it, some time after extirpation of the spleen, striking changes are found, like those attending leucæmia (Neumann). Hyperplasia of the lymphatic glands was not observed.
3. The vicarious activity of these glandular organs, which seems to be dependent upon many outside relations, is not always complete in animals in whom the spleen has been extirpated, for, especially in the first months after the extirpation or after artificial atrophy of the spleen, the blood is found changed in its composition. From this there is to be deduced an immediate influence of the spleen in the preparation of the blood, and, in fact, as these experiments go to show, a formation of white corpuscles as well as of the red.
4. Upon *gastric* and *pancreatic* digestion the spleen exercises *no* influence whatever. The voracity of animals deprived of the spleen, which has been adduced as proof thereupon, does not exist as a constant symptom.

ART. 12.—*On Fatty Degeneration of Muscle.*

By M. STRAUS.

(*Thèse de Strasbourg: Archives Générales de Médecine*, No. 1, 1871.)

The physiological history of the elements of muscle is a subject of science which has been cultivated with great zeal and success so far as it concerns anatomy and pure physiology. The same, however, cannot be said with regard to the pathological anatomy. The muscular element has remained, so to speak, subordinated to the nervous element, and histology has not yet dealt sufficiently deeply with the lesions of muscles. M. Straus, without pretending to

fill up this vast gap, has studied one of the morbid alterations of this system. His book consists of three parts: fatty degeneration in general, that of the muscles of relative life, and, finally, steatosis of the muscles of organic life, and especially that of the heart and of the muscular coat of arteries.

To establish the law which controls as much the physiological as the pathological appearance of fat in the tissues, and to lay down a chemical and histological theory of this formation, is a problem which science has not resolved. But the significance of this steatosis, and the conditions which favor it, are more and more known. Whilst the cell enjoys the plenitude of its vitality, the fat, which without doubt pre-exists, is present in a state of combination which prevents its recognition, but as soon as the organ suffers, either by disease or by old age, this combination changes, and the fat makes its appearance. The final doctrine is still that which was laid down by M. Kuss in 1846: "The appearance of fat in a free state is a very common symptom which may be observed during the decadence of a great number both of normal and morbid microscopic elements. Traces of this may be found wherever in the intimate structure of the organism a cell dies and is disintegrated.

Though the chemical cause and the mechanism of the appearance of fat may escape our recognition, we are acquainted with a great number of remote physiological and pathological causes of this production. Physiologically fat is presented under two conditions: it forms the chyle corpuscle or the fatty granule; it is fixed in the interior of connective cells; it gives a rounded form, prevents violent contact, preserves heat, and constitutes a reserve, last resource for the organism, when the loss of tissue is excessive, and when nutrition is insufficient.

The pathological rôle of fat is still more considerable: inflammation is characterized by the appearance of fat among the histological elements; the pus globule presents a very close analogy to the adipose cell. An organ which no longer performs its functions becomes infiltrated with fat: the paralyzed muscle and the nerve detached from its centre undergo this change; the same change has been made out in inflamed cartilage and in the fundamental substance of bone necrosed or kept simply at rest. If to these facts be added the acute and chronic steatosis which accompanies severe fevers, constitutional poisoning, and cachexiæ, one will form an idea of the part attributed by modern researches to fatty degeneration. M. Straus alludes to the steatoses which result from the progress of age, from cancerous, tuberculous, and syphilitic cachexiæ, from alcoholism, from severe fever, from poisoning by phosphorus, antimony, and arsenic; he endeavors to attribute them to a general cause, to a special dyscrasia, acute or chronic, which really is nothing more than a morbid change of nutrition or an atrophic lesion, the nature and mechanism of which remain unexplained.

The author deals in the first place with voluntary muscle; the primitive fibre of striated muscle presents an enveloping membrane and contained material—syntonin, an albuminous substance with an acid reaction rich in salts of potash, and affording to the muscle those properties which are lost when it is infiltrated with fat. The different stages of this degeneration are described; they are three in number, and are characterized functionally by diminution of the muscular properties, and by their alteration and extinction. Fat is substituted for syntonin; the first property which is lost is the elasticity of muscular fibre; in the dead subject the degenerated muscles offer less resistance to traction than those which are healthy. Contractility is not due to the motor nerve; it is really a muscular property. Physiological analysis by means of curare has settled this question and confirmed Haller's proposition. This contractility resides in the syntonin, and when this substance undergoes morbid change, the muscle ceases to react to its natural stimuli: to the nervous influence, to elasticity, to chemical agents, and on a diminution of caloric. The loss of contractility results from a substitution of fat for syntonin, a modification which is established either primarily in the muscle, or secondarily in consequence of some circumstance which has condemned the muscle to prolonged repose. This substitution is more or less rapid according as the muscle is submitted singly or collectively to the action of the will and the reflex excitation of the cord, or as the primary action is established in the fibre itself. In the latter case the

electrical contractility fails, together with, or is lost even earlier than, the voluntary contractility, and requires a longer time to reappear than the latter.

Progressive fatty muscular atrophy has been attributed to various causes. Dr. Straus considers the various hypotheses which place its starting-point in the brain, in the spinal cord, and in the great sympathetic; he believes this affection to be a primary disease of muscle, the type of idiopathic fatty metamorphosis of this structure. The waxy degeneration of muscle which accompanies typhoid fever, variola, acute rheumatism, and generally severe and prolonged febrile complaints, is also regarded as a form of steatosis.

The degeneration of the muscles of organic life presents a most important subject for study, as also that of steatosis of the heart, the fibres of which resemble anatomically those of the muscles of animal life, and physiologically of those of organic life. Dr. Straus shows by anatomical researches how this adipose transformation of the cardiac fibre accompanying hypertrophy is almost one of the physiological characters of the heart at an advanced age. The relations of steatosis and hypertrophy form the subject of some interesting remarks, and fatty degeneration of the heart developing itself at times with remarkable promptitude, is indicated among the causes of the sudden death which occasionally occurs in the course of severe fever.

Fatty degeneration of the smooth fibres presents less numerous facts. The author cites the physiological steatosis of the muscular fibres of the uterus after delivery. But the cellular fibres which form the middle coat of arteries are a frequent seat of this fatty transformation. This condition of arteries of small and mean calibre has been often described, and this degeneration has been regarded as consecutive to that of the deep layer of the internal coat. On this point M. Straus has made some interesting researches. He has observed that at an advanced period of life the cellular fibres of the middle coat disappear, and that their place is occupied by a series of bright granulations soluble in ether. In young subjects the cellular sheath of the artery is intimately blended with its arterial coat; in aged persons the separation of this sheath from the outer coat can be easily performed, and the internal surface of the vessel is found smooth, as if covered by a serous membrane. This diminution of the connections of the artery with the inclosing tissues has destroyed most of the vasa vasorum, and has thus produced an actual anæmia of the arterial wall. Being thus badly nourished, it degenerates, and its muscular tissue is the first to waste, and loses at the same time its elasticity and contractility. Senile atheroma occurs at a later period, attacking the internal tissue, which has been irritated by shocks no longer reduced by the elasticity of the arterial walls. Thus it is explained how in subjects of an advanced age the muscular is infiltrated before the internal tunic, an order of development characteristic of senile steatosis.

ART. 13.—*On the Changes in the Vessels of the Pia Mater resulting from Irritation of Sensory Nerves.*

By Drs. FRANZ RIEGEL and F. JOLLY, of Würzburg.

(*Virchow's Archiv*, lii. 2, 1871; *Schmidt's Jahrbücher*, No. 5, 1871.)

The authors have recently tested, by new controlling experiments on rabbits, cats, and dogs, the statement of Nothnagel that violent irritation of a peripheral sensory nerve will produce contraction of the vessels of the pia mater. They have arrived at the following results:—

If animals be treated as they were by Nothnagel, and be not narcotized, one will certainly obtain contraction of the vessels of the pia mater; the galvanic current, however, must be so strong that the muscles involved acquire a state of almost tetanic spasm, and the animal experimented upon utters vehement cries, and shrinks. The action is even continued after the animal has commenced to be quiet.

Since in these experiments one might have to deal with other than reflex processes, the authors made similar experiments on animals which were narco-

tized by laudanum, morphia, hydrate of chloral, and curare. Here the result of the irritation was quite negative. The vaso-motor nerves were not paralyzed, there was strong excitability in the cervical sympathetic nerve, and even the motor nerves were still excitable, as the muscles moved on applying stimuli to the integument.

This difference in the results with narcotized and non-narcotized animals is explained by the fact already mentioned that the latter, in consequence of the irritation, almost constantly utter cries. The brain, therefore, during this time is subjected to strong expiration-pressure, whilst the inspiratory movements are but short and shallow.

Again, it has been learnt from experiments that the arteries of the pia mater contract during forcible expiration, and dilate again during inspiration.

Contraction of the arteries of the pia mater may also be produced when the cerebral tissue at a trephine opening is pressed upon, especially when the dura mater has been preserved. This contraction then commences at the osseous edges of the orifice.

In those exceptional cases where, in spite of narcosis, circumscribed contraction of the vessels of the pia mater results, one can generally recognize the existence of some mechanical cause, chiefly an increased quantity of cerebro-spinal fluid.

In order to find out the course of the vaso-motor nerves to the pia mater, the authors irritated and cut through the sympathetic in the neck, and also tore away part of the superior cervical ganglion. They found no change in the vessels of the pia mater, whilst the results of the experiments were well marked in the aural vessels and in the pupil. Hence it follows that neither the trunk of the sympathetic nor its ganglia conduct vaso-motor fibres to the arteries of the pia mater.

ART. 14.—*Report of a Case of Tumor of the Pineal Gland.*

By P. BLANQUINQUE, M.D.

(*Gazette Hebdomad. de Méd. et de Chir.*, September 15; and *British and Foreign Medico-Chirurgical Review*, October.)

Dr. Blanquinque records the case of a man, aged thirty-nine, who was admitted into La Charité on September 7th, 1869. His illness dated from September, 1868, when he began to suffer continual and increasing pain in the head. In February, 1869, he found that the acuteness and extent of his vision were becoming diminished. He then went into the Beaujon Hospital, where he had several epileptiform attacks, and his headache resisted all treatment. In La Charité he was treated with iodide of potassium, but the epileptiform attacks occurred every two or three days. During the attacks he entirely lost consciousness; his face was congested, his muscles stiffened; otherwise he had a good appetite, his digestive functions were perfect, and his cerebral faculties intact, except his memory, which was defective. In January, 1870, he was obliged to keep his bed, his limbs would not carry him, but he was not paralyzed; he was quite blind, the pupils largely dilated. The fundus oculi, examined with the ophthalmoscope, showed no alteration of the circulation, but there was atrophy of the papilla; the eyes were drawn downwards and to the right, but there was no paralysis of the motor nerves of the eye. Violent pain in the back of the head and around the orbits. Bromide of potassium seemed to relieve the pain and produce sleep at night, but the attacks became quotidian, feebleness increased, the intelligence became obscured. He died convulsed on February 8th. Autopsy thirty-six hours after death. Thoracic and abdominal organs healthy. On the upper surface of the brain were about a score of small reddish vegetations, situated on two symmetrical lines two centimetres from the falx cerebri. The dura mater thickened, pearly, adherent to the brain in the situation of the vegetations. Careful examination showed that there were protrusions of the cerebral substance through the dura mater in the situation of the Pacchionian corpuscles. The convolutions were

flattened; the sulci filled. At the base there existed a large serous effusion, which, by compressing the brain, had flattened the convolutions, and had overcome the resistance of the dura mater at the weakest part, that is to say, in the situation of the Pacchionian corpuscles. The central and lower parts of the brain were softened by imbibition. The lateral ventricles and the fifth ventricle were much dilated and filled with a clear yellowish fluid; a finger could be introduced into the foramen of Monro. The choroid was very vascular; the veins of Galen were gorged with blood, especially the right vein; the pineal gland was enlarged into a tumor the size of a pigeon's egg. On cutting it, the tumor presented some calcareous granulations and hemorrhagic patches. This appearance is that presented by tumors of the choroid described by Virchow under the name of psammomes. The tumor was not exactly in the middle line; it extended more to the right than to the left; it compressed the veins of Galen and the quadrigeminal bodies, especially the posterior. Examined microscopically by M. Graucher, after hardening in chromic acid, a section showed various colors, reddish-brown, deep yellow gray. A large quantity of small cells of all forms, round, elongated, brilliant, and refracting (nerve cells or degenerated epithelium?), are aggregated round processes of connective tissue, and form the fundamental elements of the tumor. The accessory elements are large vessels gorged with blood, hemorrhagic islets sown with crystals of hematoidin, and amyloid concretions forming small globules visible to the naked eye. The tumor seemed to be an hypertrophy of the pineal gland, presenting the normal elements and general character, with the addition of more numerous concretions and disseminated hemorrhages. The microscope showed that the small tumors on the convexity of the brain consisted of cerebral substance. The author concludes that a tumor of the pineal gland does not give rise to any symptom proper to itself; the symptoms were those which are common to cerebral tumor.

ART. 15.—*Tumor of the Middle Lobe of the Cerebellum.*¹

By J. HUGHLINGS JACKSON, M.D.

(*British Medical Journal*, August 26.)

This case was observed in the London Hospital by the author and by Mr. Stephen Mackenzie. There was found, on post-mortem examination, a tumor of the middle lobe of the cerebellum, which had pressed on the corpora quadrigemina and on the veins of Galen. There was also a small tumor of the right corpus albicans. Much fluid was found in the cerebral ventricles, and the horns of the lateral ventricles were greatly dilated. The chief symptoms during life were—(1) enlargement of the head, (2) double optic neuritis, and (3) reeling gait, followed by permanent rigidity of the legs and paroxysms of convulsions somewhat like those of tetanus. These seizures, the author supposed, furnish some evidence in support of the view that the changes in tetanus are in the cerebellum. The author referred to cases of a like kind, and particularly to one by Dr. Gull and to one by Mr. Waren Tay, in which a like diagnosis has been made.

ART. 16.—*On Male Chlorosis and Allied Diseases.*²

By T. INMAN, M.D.

(*Liverpool Medical and Surgical Reports*, October.)

The author's desire in this paper was to call attention to a group of diseases which have in common a peculiar condition of the blood, and generally, but not always, a waxy appearance of the skin. These complaints have received various

¹ Read at the 39th Annual Meeting of the British Medical Association.

² Read at the Liverpool Medical Institution—Session 1870-71.

names—chlorosis, leucæmia, purpura, scurvy, hemorrhagic diathesis, and the like ; but although we have assigned cognomens to them, we are to a great extent ignorant of their true nature. Let us take chlorosis for an example. In that disease we find the blood deteriorating gradually in quality, the patient's strength diminishes, the discharge common to healthy women becomes scanty or ceases altogether ; but there is no tendency to hemorrhage, and as a general rule large doses of ferruginous tonics effect a cure in a short space of time. So common is this restoration to health with the use of strong chalybeates, that a very common formula was "Chlorosis is caused by a want of iron in the blood." This did not, however, explain why the globulin was originally diminished, and in what way the metal operated to increase it.

After noticing the fact that the extreme pallor, and many of the other symptoms characteristic of chlorosis, were coincident with many gastric affections, especially with gastric ulcer—which, like true chlorosis, attacks young women chiefly—Dr. Inman observed that between true chlorosis and such cases as the following, he could not see the smallest distinction. Mr. E., when about forty years old, began to find his health fail, his skin became white and waxy, his blood watery, his strength slowly declined, but there was no emaciation, and no discharge of blood, nor any excessive secretion. Pilgrimages to doctors and to various spas all proved useless, death ensued, the power of digestion remaining to the last. His body was, after death, carefully examined by Dr. Vose, Mr. Worthington, and Dr. I., yet no evidence of disease could be found ; the lacteals of the mesentery were filled with chyle, the thoracic duct was large and pervious, and the heart was healthy. The only organ diseased was the blood, in which the globulin was so sparsely represented that the fluid barely tinged a white handkerchief. Here was chlorosis in the male.

The next case which came under Dr. Inman's observation was in a man originally powerfully built, and who retained his fleshiness to the last. In him the disease had come on slowly, but had advanced in spite of every remedy. When Dr. Inman saw him he had been ill for more than six months, and appeared to be a typical case of chlorosis. He was sallow and wax-like, very weak, without a stain upon the skin, and without any bleeding or inordinate discharge. His appetite was fair, and his digestion good. His urine was natural, and no disease could be detected except in the blood. In two days the man died, but no autopsy was allowed. More recently Dr. Inman had had under his care in the Royal Infirmary a young woman, whose case seemed to be one of pure chlorosis, but where all forms of steel proved useless. Her urine when examined was found to contain albumen ; but what the connection can be between a chlorotic-looking skin and renal disease, it is difficult to understand.

At the time this paper was written (Oct. 1870), the author had under his care a man about forty-five years old, whose symptoms were precisely those of a chlorotic girl ; but, unlike the other cases narrated above, this patient has a tendency to bleed from the nose and bowels. The complaint came on very gradually, and progressed in spite of sea air, generous diet, cod-liver oil, &c. About three years before the present attack commenced, the patient was threatened with phthisis, but recovered perfectly. He improved for a while under the use of steel, friction of the body with turpentine and oil, and milk with brandy ; but quite recently Dr. Inman had heard of his death from epistaxis. Another patient, of about the same age, suffered also from the symptoms of pure chlorosis. There was no bleeding or any discharge, but simply a steady sinking of the vital power without any emaciation or dropsy. Two years elapsed between the first indication of failing health and dissolution, and during the whole of this time every hygienic and medicinal agent that could be thought of was successively but unsuccessfully used.

A short time ago Dr. Inman had in the Royal Infirmary a male patient who, with the appearance of chlorosis, combined the hemorrhagic diathesis. During the last two years he had been bleeding from the nose or mouth, or both. Few days have elapsed at any period without a discharge of blood. But the man, though pale, is not emaciated, and the only tangible complaint beyond that referred to, is a swelling situated above the right wrist, and which appears to be due to periostitis. He has not yet exhibited any purpuric spots. He left

the hospital, after having been resident there about six weeks, without having derived any apparent benefit from treatment.

Another case was seen by Dr. Inman in one of Dr. Turnbull's wards, but in this instance, though there was no appearance of chlorosis, he suffered almost daily from hemorrhage from the nose, or mouth or bowel. Every inquiry made into the history of these cases failed to discover any adequate cause for the disease, and none of the patients were benefited by treatment.

One day Dr. Inman found in his wards in the Royal Infirmary a young woman who looked as if she had been the victim of frightful brutality. Her eyeballs were bloodshot, her eyebrows and eyelids livid and distended like a prizefighter's after a pugilistic encounter, her nose was swollen with effused blood, and her lips enormously enlarged, and apparently bursting with the quantity of clots below the surface. A stream of blood flowed from the angles of the orbit, from both nostrils, and from the mouth. Her urine was more bloody than aqueous, and a quantity of gore came from the vagina and the bowels. Dr. Inman had never before seen such a sight. The girl stated that she had gone to bed perfectly well on the preceding night, and awoke next morning in the plight described. Up to that period her mode of living had been in every respect normal, nor could any cause be found for the phenomena. Within a few days another young woman was admitted into the infirmary with analogous symptoms. The resemblance between these cases was as perfect as it possibly could be, in their symptoms, in the suddenness of their invasion, in the universality of their bleeding, and in the absence of anything to account for the attack. The former patient recovered in less than a month, and lost all trace of the disease in six weeks; the other, who was treated on the same plan, died before the end of a fortnight. In the families of neither of these patients was there any history of consumption, and this fact, so far as it goes, deserves to be noticed for this reason—viz., that although there is no type of disease in which the hemorrhagic diathesis is more common than it is in the phthisical, yet consumptive patients rarely exhibit such severe symptoms as those we have described, nor even the mildest form of purpura. Epistaxis occurs exceedingly frequently during the youth of those liable to tuberculosis, so also is menorrhagia common in females predisposed to phthisis. Hæmoptysis is a general harbinger of phthisis, and in cases such as these a cut or wound shows no tendency to cease bleeding. Yet with all this nothing is more rare in phthisis than to meet with hæmaturia, or with a discharge of blood from the bowels. Again, there is perhaps no form of disease in which we find purpuric spots more commonly than in sea and occasionally in land scurvy; but although in this complaint we have spongy gums and great debility, we rarely if ever find discharges of blood from any of the organs of the body. The same remarks apply to albinism, the lead or melanosis cachexia, and Bright's disease. In many cases of ague the color of the face has changed during the first rigor to a sallow, wax-like hue closely resembling chlorosis, and has been improved again by the first dose of quinine. The pallid color attending enlargement of the spleen has often been noted by writers, and, as a natural consequence, this viscus has been supposed to be a blood-producer. We may also notice here the peculiar bronzing of the skin sometimes, but not invariably, accompanying tubercular or other disease of the suprarenal capsules, which is unattended by a tendency to hemorrhage from the mucous surfaces.

Dr. Inman next referred to the excessive pallor often met with in acute rheumatism, making the patient look as white as well-bleached wax; also the sallowness attending the cancerous cachexia, and the whiteness accompanying long-continued small, or sudden and great, losses of blood. He inquired whether great pallor of the skin was by itself to be considered as a symptom of disease, and concluded that if unattended by debility it was not to be valued as such, instancing the pallor acquired by Europeans resident in India, and of persons who have been severely marked with smallpox.

What is that complaint, then, of which it is the visible sign? We have seen that it may indicate tuberculosis, struma, the cancerous cachexia, disease of the kidney or of the spleen, ague, excessive loss of blood, and the like. But if none of these are present, what shall we say? Can we say that male chlorosis

without loss of blood from any organ is identical with what by way of contrast we may call the hemorrhagic diathesis. Is either or are both allied to struma, to tuberculosis, or to any known disease? The only answer Dr. Inman can find to these queries is that the evidence of which we are possessed points to the fact that male chlorosis or the analogous disease in elderly women is an affection *sui generis*, of which we at present know nothing excepting its symptoms, and that the diseased condition in which general bleeding takes place is equally incomprehensible. So far as he is able to discover, this type of affections is not hereditary. They are not allied by family ties to any known disease, nor can they be traced to the use of any particular diet, or to the deprivation of any element of food. It is true that we frequently see alcohol-drinkers pale, but the patients he referred to were always temperate. Indeed, from his own experience, he should say that pallor of the skin is more common amongst women who dislike all alcoholic drinks, and amongst men who eschew them wholly, than amongst the lovers of the glass.

After alluding to his not being able scientifically to determine the etiology and nature of the diseases treated of in this paper, and his inability to draw any inferences in an empirical manner, seeing that treatment had invariably failed, Dr. Inman compared these affections with such diseases as hepatic cirrhosis, regarding the origin and cure of which we know little or nothing. In the disease termed cirrhosis the hepatic cells are diminished in absolute number, and the connective tissue seems to increase, and no one can understand either why the liver should contract, or what can be done to make it enlarge again. So it is with the blood in the cases of chlorosis we have been describing. The blood corpuscles diminish in quantity, and the connective tissue—in this case the liquor sanguinis—increases, and no one can explain why the former occurs, or what can be done to prevent it. We have so long known that hob-nail liver is an affection that is incurable, that we have ceased to feel shame at its being cited as a disease for which there is no remedy. There is therefore no reason why we should not consent to include in the same category the diseases we have been describing. We will not do so, however, until everything has been tried that science can suggest; and it is with hope that others may be able to do so, or to propose some course of treatment beyond what has hitherto been tried, that he made these remarks.

ART. 17.—*On Feigned Diseases; their Detection and Management.*

By GEORGE WILSON, M.A., M.B., C.M.; Medical Officer H.M.'s Convict Prison, Portsmouth.

(*Edinburgh Medical Journal*, November.)

In this paper Dr. Wilson cites a number of cases that presented more difficulties in the way of diagnosis than those usually to be met with in prison practice, and recapitulates briefly some of the more salient points in diagnosis, which though they may not be of much value when taken singly, may nevertheless be of some service when taken collectively.

1. In feigned insanity, the attack comes on suddenly and without any warning. This is rarely the case in real insanity.
2. There is an absence of all purely physical symptoms.
3. If the feigned attack be violent, the malingerer soon exhausts his energies, and will fall into a sound sleep within twenty-four hours.
4. In the ravings of feigned insanity, there is a marked absence of any variety of ideas.
5. In all feigned cases, the malingerer will either refuse to answer simple questions, or will answer them in a wilfully absurd and incorrect manner.
6. He will seldom look any one in the face.
7. If delusions are feigned, he cannot conform his conduct and bearing to the character of the delusions.
8. As a rule, the feigned attack is overacted.

9. There are no lucid intervals, the malingeringer striving to appear insane on every point.

10. A feigned attack is so incongruous and incomplete, that it is next to impossible to classify it under any of the known varieties of insanity, whereas all feigned attempts bear a greater or less resemblance to each other.

There are several other points which are common to cases of acute mania, such as stripping naked, filthy conduct, and age (the prisoners who feign insanity being all young); but to these Dr. Wilson does not attach much importance.

ART. 18.—On the Supposed Virulent Emanations, and on the State in which Viri are cast into the Atmosphere by the Subjects of Contagious Diseases.

By M. A. CHAUVEAU¹

(*Gazette Hebdomadaire*, No. 25, 1871.)

"In the memoirs on virus and the theory of natural contagion which I have had the honor of presenting to the Academy, I demonstrated that the contagious property in virulent humors is not fixed in the fluid material, but in the solid granular particles which these humors hold in suspension.

"Three series of experiments have been devoted to the demonstration of this.

"1. If one extend in a large quantity of water a virulent humor capable of producing on the skin by sub-epidermic inoculation a closely circumscribed and well-marked local lesion, and if one inoculate this dilution, the lesion is either not produced or is reproduced with all its characteristics: there is never any intermediate state. Out of a certain number of punctures made exactly under the same conditions, few or many of these prove abortive according to the degree of dilution. We have produced here what happens with spermatic dilutions employed for bringing about artificial fecundation. Dilution separates the active elements, but does not attenuate this activity. These elements then exist in virulent humors in the condition of independent solid particles, like spermatozooids in the spermatic fluid.

"2. After having proceeded by washing and filtration to separate the corpuscular element suspended in the virulent humor, if the corpuscles alone be inoculated and then the fluid alone, inoculation of the latter will fail whilst that of the former will succeed. These solid particles then render the contagious property.

"3. Finally, if a virulent fluid be covered by a layer of distilled water, diffusion of the fluid portion of this humor into the water takes place rapidly. Inoculation of this water drawn up from the surface by means of a capillary tube would permit one to study the activity of the fluid part *alone* of the humor, that is to say, without the granular suspended corpuscles. But this inoculation gives only negative results.

"This last series of observations was the starting-point of fresh researches, the results of which I now submit to the Academy. These deal with the state of virus in air infected by the subject of contagious maladies.

"With the preceding data on the physical condition of the active elements of virulent humors, can one continue to accept the old theory of a volatile miasm to account for the presence of virus in contaminated atmospheric media? I think not. In my theory of the contagion called *miasmatic*, I have admitted that the virus is to be found in the air in the state of solid particles which are cast there chiefly by the respiration of diseased subjects. If indeed the virulent elements are incapable of spreading in water by molecular diffusion, they ought to be not less incapable of spreading in this manner in the air. Still, it was necessary to acquire a direct demonstration of this.

"The volatile nature of virulent material and its diffusibility in air being admitted, it is evident that these substances ought to spread in the atmosphere

¹ Presented by M. Boulay to the Académie des Sciences.

with aqueous vapor spontaneously raised by evaporation. If the atmosphere be limited, and if the aqueous vapor which it holds can be condensed upon the sides of the limiting vessel, it is evident that all the substances caused by diffusion into the air will, together with the aqueous vapor, be found in the small drops resulting from the condensation of this vapor. If then these drops be collected and inoculated, it will become an easy matter to assure one's self whether or not they contain the virulent elements.

"The experiment is very simple and easy to make. The virulent material is collected in a cup, which rests upon a flat plate of glass, and is covered by a small bell-glass. In order to favor evaporation, the glass plate is placed on a sand-bath or a hot brick, the temperature of which does not exceed 40 degrees Centigrade. In order to facilitate condensation, if the surrounding temperature is not very low, the bell-glass is covered with cotton-wool, upon which ether is dropped from time to time. The small drops which are quickly deposited on the inner surface of the bell-glass are sucked up and collected by means of a capillary tube. Comparative inoculations are then made of the fluid thus obtained and of the virulent matter from which it emanates.

"Of the viri which are regarded as likely to be propagated by air, two especially have been made use of by me in those experiments since 1868. These are the virus of variola and that of the scab of sheep. I have in all cases made out that inoculation of the fluid removed from the virulent matter by spontaneous evaporation fails, whilst with the latter fluid it succeeds.

"Ultimately I twice performed this experiment with the virus of epizootic typhus, that of all the viri which probably spreads in the atmosphere most subtly. In these two experiments I inoculated with impunity, that is to say, with a negative result, the water extracted by the above described proceeding, from fluids supposed to be eminently virulent, as the tears, the discharge from the nose, and the diarrhoeic material.

"Thus the viri improperly called volatile are incapable of spreading in the atmosphere and of interposing themselves, either by vaporous or gaseous diffusion, between the molecules of the air. The elements possessed of virulent properties cannot exist in the atmosphere in a different condition than in the humors of diseased subjects; that is to say, that they maintain the form of solid particles held in suspension.

"The conditions which permit viri to spread under this form in the atmosphere, are incomparably more unfavorable to the transmission of contagious maladies by respiratory absorption than the conditions inherent to vaporous or gaseous molecular diffusion. Thus, although it is possible to study the explosion of an affection so eminently contagious as the cattle plague in such a manner as to determine rigorously the immediate causes of contagion, it should be observed that though infection through the air is very frequently manifested in a confined atmosphere, the same does not take place in free air. In most instances contagion at long distances is effected by the direct transport of contagious material fused to various kinds of intermediate objects and by the absorption of these matters in the alimentary canal."

ART. 19.—On the Different Therapeutic Indications of Rheumatism and Neuralgia, together with some Remarks on Rheumatism as a Sequela to Diphtheria.

By D. DE BERDT HOVELL.

(*The Lancet*, August 12.)

At the Thirty-ninth Annual Meeting of the British Medical Association Mr. Hovell read a paper on the above subject. He said that both rheumatism and neuralgia are conditions of ill-health attendant on low or depressed nerve-power; both are highly susceptible of pain. In rheumatism the first object is to eliminate the lactic and other allied acids from the blood, and to reduce the excess of fibrin; in neuralgia, on the other hand, to supply the deficiencies of the blood, adopting the opinion of Dr. Bence Jones, that the absence of quinioidine

is the cause of malarious neuralgia. A similar plan of treatment is called for in the neuralgia of exhausted nerve-power, in that of old age, and from organic disease. Both diseases are liable to aggravation from intestinal irritation, and neuralgia from carious teeth, and other forms of diseased bone. In both diseases the susceptible condition of the nervous system calls for relief by some form of narcotic, &c. Acute rheumatism has frequently been observed to follow diphtheria, in which case it is important to ascertain that the urine is free from albumen before adopting the blistering treatment of Dr. Herbert Davies. Assuming that there is excess of fibrin in the blood in diphtheria as well as in rheumatism, cantharides has been found to check elimination by the kidneys, and so to aggravate the symptoms, especially the cardiac complications. In this class of cases iodine and iodide of potassium are specially advocated.

ART. 20.—*Sudden Decrease in the Frequency of the Pulse during Disease as a Sign of Approaching Cerebral Complication.*

By GEORGE GRAY, M.D.

(*British Medical Journal*, July 22.)

Dr. George Gray calls attention to the sudden decrease in the frequency of the pulse during disease as affording very material aid to a prognosis of cerebral complication. This is important because, as well known, diseases of the brain, from the insidious manner in which they often approach, and from the great difficulty which exists of recognizing them in their earliest stages, together with that of making an accurate diagnosis, even when we know them to be present, demand very close and careful observation on the part of the physician. Dr. Gray, in three cases, has observed this sudden decrease in the frequency of the pulse during the course of diseases in which the pulse usually ranges high, some time before brain-complication could be recognized by any other sign.

ART. 21.—*Summary of Five Cases of Acute Rheumatism ; with Clinical Remarks on their Duration and Treatment, at St. Mary's Hospital.*

By J. HANDFIELD JONES, M.D.

(*The Lancet*, Nov. 4.)

The abatement of the symptoms of acute rheumatism is so gradual that it is difficult to date accurately the cessation of all morbid action; but in the following cases the subsidence of pain, and the decline of the temperature and pulse to the normal standard, have been taken as the guide. If any inaccuracy remains to be accounted for, it is that the duration of the disease has been overestimated rather than the reverse.

In the case of J. E., aged forty-nine, whose attack lasted about forty-five days, alkalies were resorted to for two days, then quinine in full doses, and lastly strychnia. His urine remained alkaline for sixteen days or more after the alkali had been omitted. A. B., aged thirty-three, recovered completely in eleven days. Full alkaline treatment was commenced on the fourth day, and gradually slackened. He took no other kind of medicine. In the case of C. G., aged twenty, the disease lasted only nine days. The treatment commenced on the third day, and consisted exclusively of five-grain doses of quinine, four times a day. His urine was found to be alkaline on the fourth day. J. B., aged twenty-seven, was admitted on the fifth day of illness, and remained subject to rheumatism about twenty-nine days. Five-grain doses of quinine, repeated four times a day for three days, produced no improvement. He was therefore ordered one grain of iodide of potassium and five grains of the bromide, in two ounces of citrate of potash mixture, every two hours. In four days he exhibited a decided improvement, and in a week he was comparatively well. The fifth case was that of a man of good constitution, thirty years of age, who was admitted on the fourth day of his illness. He had full alkaline treatment and none other, and recovered in thirteen days.

Dr. Handfield Jones's remarks on these cases were to the following effect. It is clear that acute rheumatism has not a fixed period of continuance, but is, on the contrary, subject to very considerable variations. The question then arises, on what conditions do these variations depend? To some extent possibly on the time which elapses before a case comes under treatment, but to a very much greater extent on the *quality* of the individual system. Some systems present a much greater resisting power to morbid agencies than others, succumb when they are overborne only for a short time, and then rapidly spring back again to health; others when once depressed are very slow to regain their former status. Advanced life and debility, however induced, favor the latter condition. Predisposition to a particular disease must also be taken into consideration; some are prone to gout, some to rheumatism, some to Bright's disease, and some to fatty degeneration; and whatever that predisposition may consist in, the man who is predisposed to rheumatism will succumb more readily to acute rheumatism, and recover more slowly, than a man who is not. Therefore, as it is difficult in any given case to form a definite estimate of the strength of a man's constitution, or of his degree of debility, as well as of his predisposition to disease, it is a very difficult matter to determine beforehand the duration of an attack of rheumatic fever.

The next question is, what are the circumstances which should direct the physician in the choice of *remedies*? These also admit of only vague definition. In some measure they depend on the same circumstances which influence the duration of the disease. It is almost certain that as soon as the *urine* becomes alkaline (and it is so sometimes from the commencement), the use of alkalies will be not only useless but injurious; still more certainly will it be so if the perspiration also be alkaline or neutral. If, on the contrary, the urine be highly acid and rather scanty, alkalies are very likely to be serviceable. When there is great thirst, with a dry, clammy mouth, alkalies in an effervescing form are very grateful. The state of the *pulse* is important. If it be very weak and soft, alkalies are contra-indicated; this is especially the case if, at the same time, the skin yield a copious flow of neutral sweat. In such cases quinine in full doses is very often of great service. Not unfrequently a mixed treatment of alternately given quinine and alkalies, as practised by Dr. Garrod, is productive of much good. In a recent case of a woman who was very weakly, anæmic, menorrhagic, much distressed, restless and half delirious at night, with a high temperature, that treatment was followed in four days by almost entire freedom from rheumatic pain, and by greatly improved sleep, although the temperature remained high for many days afterwards.

The condition of the *nervous system* should be noted. When it is irritable, bromide of potassium and repeated subcutaneous injection of opiates afford more relief than any other measure.

Blisters are allowed by Dr. Gull and Dr. Sutton as valuable agents in relieving suffering, though they do not curtail the course of the disease. But they are not suited to cases in which there is not much inflammatory swelling, although the pain and intolerance of movement be very great; they add to the nervous irritability, and may advantageously be made to give place to continuous poultices, medicated, perhaps, with laudanum or an alkaline solution.

Purgatives, containing calomel, or podophyllin, or extract of colchicum, should always be given at the outset, and repeated according to need, if the tongue be foul, the taste perverted, and the patient loathe food.

For the *pains* which are apt to linger *about the shoulders and arms* after all febrile action has ceased, the subcutaneous injection of atropia will generally be found to be the best remedy, but sedative liniments are often useful.

As to *food*, the leading of the appetite should be followed. It can be of no use to intrude on an unwilling stomach food which it cannot digest; but as soon as the patient desires solids he should have them. Until then, soups and milk and such like food are essential.

A high temperature appears to be rather an indication for giving than withholding *stimulants*, and wine should always be given during the febrile stage if the patient be low.

In conclusion, Dr. Handfield Jones said that remedies administered carefully

and with discrimination may, and often do, effect much good; and that, although the intimate pathology of acute rheumatism is so little understood that a rational treatment is impossible, no justification can be advanced for the neglect of treatment by drugs.

ART. 22.—*Treatment of Rheumatism at the Middlesex Hospital.*

(*Middlesex Hospital Reports*, 1870.)

From the carefully compiled tables of the hospital registrar's reports it appears that one hundred and twenty-three cases of acute and subacute rheumatism were under treatment during the year; 56 males and 67 females. Of these, 108 cases, 50 males and 58 females, were admitted during the year 1870. Three cases died; 13 remain under treatment. Of the 110 patients who left the hospital, reliable data were so far obtained as to the cardiac affection in 78. The details of the other cases were either incomplete or not sufficiently trustworthy for the purpose of drawing accurate conclusions from them. Of these 78 cases, 38 were males and 40 females. Recent heart mischief occurred in 50 of these—in 25, or 67.7 per cent., of the males, and 25, or 62.5 per cent., of the females. Of the 78 cases, 28 were apparently unaffected by recent cardiac mischief, but in four of these there was old valvular disease.

Complications.—In 9 bronchitis, in 1 broncho-pneumonia, in 4 pneumonia, in 3 pleuritis, in 3 pleuro-pneumonia, in 9 tonsillitis, in 1 epistaxis, in 1 menorrhagia, in 1 epilepsy (to which, however, the patient had long been subject), in 2 hysteria, in 1 mania, in 1 peritonitis, in 1 enteric fever, in 6 albuminuria (believed in several cases to be due to embolism of the kidney), in 1 otorrhœa, in 1 diarrhœa, in 1 abscess in the axilla, in 1 acne, in 1 pompholyx, in 3 erythema, and in 2 herpes labialis.

Family History.—A reliable family history, so far as rheumatism is concerned, was obtained in 73 cases. Of these a history of rheumatism was traced in 38, affecting one or more members of the family. Of 27 cases in which the family history as regards nervous diseases was obtained, 9 were found to present the following history. In 2 families epilepsy was traced, in 1 epilepsy and mania, in 1 mania, in 3 "fits," the precise nature of which was not ascertained, and in one family one member was deaf and dumb and another very hysterical. In 5 of these cases a rheumatic family history was also present. The average total duration of illness of those patients whose 9 cases were completed was 46.8 days.

Treatment.—The alkaline method of treatment was adopted in almost every instance. Exceptions are noticed in the tables. A narcotic was not unfrequently given to produce sleep, and during convalescence some tonic with or without iron.

ART. 23.—*On Cholera.*

By GEORGE JOHNSON, M.D., F.R.C.P.

(*Medical Press and Circular*, August 30.)

At the thirty-ninth annual meeting of the British Medical Association, Dr. Johnson read a paper on Cholera, in which he maintained that during collapse there is impeded circulation through the lungs, caused by contraction of the minute pulmonary arteries; just as in the arrest of circulation which occurs in acute apnœa. He proceeded to assert that—In the treatment of cholera and choleraic diarrhœa, which is, in fact, cholera in a mild form, the main principle to bear in mind is, that the discharges are as essentially curative as is the eruption of smallpox. The discharges are not to be abruptly stopped by opiates. Experience has abundantly proved that this is a pernicious practice. Neither are they to be permitted to accumulate in the alimentary canal. There is one remedy which is almost universally applicable in all forms and stages of the disease, and that is an abundant supply of cold water to flush the intestinal sewer, and to wash out the poisonous discharges. A copious imbibition of

pure cold water will suffice for the cure of most curable cases. Palpation and percussion of the abdomen reveal the fact that there occurs not unfrequently a painful and sometimes a paralyzing over-distension of the bowel by rapidly effused morbid secretion. This, if not promptly relieved, may even go to the extent of causing a fatal obstruction. More especially is this likely to happen when the sensibility of the bowel has been deadened by opium. The plan to prevent and to remove this accumulation is to give some quickly acting yet unirritating evacuant dose. For this purpose, castor oil is, on the whole, better suited than any other remedy. The objection sometimes raised—that all remedies must be useless, because none are absorbed—obviously does not apply to such a remedy as castor oil, which, by its merely local action upon the mucous surface, stimulates the bowel to expel its contents. Experience has amply proved the success of the treatment in this and kindred classes of cases. The time to give opium, if at all, is in small doses to soothe the bowel after the expulsion of the poisonous secretions. Opiates are useless, and even dangerous, when the blood is poisoned, or when the bowel contains offensive morbid secretions. Opiates in the early stages of diarrhœa and cholera would be more frequently and decidedly injurious, were it not for the fact that their absorption is prevented by the rapid current of liquid which is being poured from the blood into the alimentary canal; therefore they are quickly expelled, together with the morbid secretions, and they are powerless to arrest the discharges.

ART. 24.—*On the Treatment of Cholera.*

By T. M. LOWNDS, M.D. (Retired), H. M. Indian Army.

(*The Lancet*, September 2.)

Dr. Lownds describes a plan of treatment which, he states, he found in India, in a series of years, more efficacious than any other; and it is the only one which in his hands gave any approach to a regular result, or seemed to afford great benefit during the stage of collapse.

He considers the treatment of the common form of Asiatic cholera under four heads: 1. Choleraic diarrhœa (cases coming early for treatment at a time when cholera is present, but before the diagnostic discharges have come on). 2. True cholera, characterized by rice-water discharges. 3. Collapse. 4. Reaction.

In choleraic diarrhœa, Dr. Lownds always found the stomach and bowels so completely emptied of their contents that the patients were quite prepared for the administration of a draught containing a stimulant antispasmodic combined with opium. The medicine he generally used was ten to fifteen drops of chloroform, with about the same or a greater amount of laudanum, dissolved in three or four drachms of brandy or arrack, and given either in plain water or preferably in an effervescing draught. As a general rule, one dose of this mixture was sufficient to control the diarrhœa, and the patient returned to his bed and slept, usually waking quite well. The dose might be repeated, if necessary, every two hours, or more frequently. When the disease has progressed to, or come under notice in, the second stage, opiates were far more sparingly used, a dose or two of calomel given, and sinapisms applied to the abdomen; a drink, consisting of one drachm of chlorate of potass with eight or ten drops of strong muriatic acid and one or two drachms of dilute nitric acid, to twenty-four ounces of water, was also given, in one- or two-ounce doses, at the will of the patient. The pulse, if this stage continues for any time, speedily becomes weak and very rapid. As soon as the rice-water discharges appeared, Dr. Lownds generally ordered two ounces of Liebig's cold soup¹ every half hour.

¹ Made by digesting eight ounces of raw lean meat, finely minced, in twenty ounces of cold water, to which eight or ten drops of strong muriatic acid and a little salt had been added, for a quarter of an hour, and then straining. This soup will not keep more than a few hours on a hot day.

In the third stage, or that of collapse, all medicine except the cold soup and the chlorate of potass drink is discontinued.

In the treatment of the fourth, or stage of reaction, we must be guided entirely by general principles.

ART. 25.—*On Cholera*.¹

By M. FAUVEL.

(*Gazette Hebdomadaire*, No. 27, 1871.)

"For some time past the daily journals have given information of the presence of cholera in Europe, and have announced the existence of this disease in an epidemic form at Naples, London, St. Petersburg, and, quite recently, at Wilna and in Eastern Prussia; from the latter region an invasion is stated to be menacing France. I thought it important that the public should know the value of these alarming reports, and I have therefore collected from the best sources all the necessary information for enabling one to see what is the present situation of Europe with regard to cholera. The present paper is the still incomplete result of my researches on this subject.

"Let me state, in the first place, that the reported presence of cholera in London is the result of a mistaken idea which unfortunately is still met with among some physicians. One may observe in London every year, during the hot season, a certain number of cases of cholera *nostras*. I assert that during the present year these cases have not been more numerous nor more severe than usual.

"Analogous cases have been observed at Naples, and, if one will take the trouble to make inquiries, it will be found that a few cases are to be met with in all countries at this season of the year.

"The similitude of the appearance, and of the name, has been the cause of the confusion existing in journals. In reality, Asiatic cholera does not exist at the present time either in England, Italy, or France. Let us see how the matter stands with regard to Russia and the confines of Poland.

"In order to make this point clear, I must allude to a previous communication on this subject made in December of 1869. At that time Asiatic cholera existed in a mildly epidemic form in several provinces of Central and Eastern Russia, where, since the importation of 1865, the disease had never entirely disappeared. The city of Kiew had been the starting-point of this epidemic manifestation. Relying upon the experience drawn from previous epidemics, and in accord with the most eminent Russian physicians, I regarded this mild manifestation as but one of those appearances which, in Russia particularly, have often followed severe epidemics, and which gradually die out without becoming the starting-point of a general epidemic.

"However this might be, in the course of the winter the cholera gradually died out in the provinces, where it had existed since the end of the summer. At Kiew it had entirely disappeared on December 15. At Moscow, however, the disease persisted, and from Christmas to February 18, 1870, there had been noted 160 cases, with 88 deaths.

"Until the middle of last year nothing had been heard of the cholera in Russia. In the course of July, 1870, it was suddenly learnt at Constantinople that the cholera had broken out at Taganrog, on the Sea of Azoff, and that it had reached Rostow. In a short time the cities along the Russian shore of the Black Sea were attacked. In the course of the month of August the disease extended to Kertch, Berdianska, Theodosia, Odessa, and even Poti, the principal port to the trans-Caucasian provinces, from whence it was propagated to the interior of these provinces.

"The rapid propagation to the whole Russian shore of the Black Sea coincided, as usual, with the arrival by steam-vessels of travellers from infected ports. This was in truth an epidemic of Asiatic cholera, proceeding from the

¹ Communicated to the Académie de Médecine, August 1, 1871.

interior of Russia with the movement produced by the transport of grain as far as the point of embarkation.

"This epidemic was remarkable in the respect of its mildness—that is to say, by the small number of attacks. At the end of September it commenced to decline, and it subsequently ceased to exist along the Russian shore.

"It is an important fact to note in connection with this epidemic, that, owing to the measure of quarantine taken by the Ottoman Sanitary Administration, the Turkish shore was kept clear of the disease, notwithstanding the numerous arrivals from infected ports. From August 2 to September 21, no less than 700 ships, several of which had cholera on board, were subjected to quarantine at the entrance of the Bosphorus.

"Whence came this epidemic? The first idea which presents itself is, that it was simply an extension of the disease which, at the commencement of the year, existed in the centre of Russia, and it had been propagated to the south with the commercial movement mentioned above.

"At Constantinople, however, it was thought that this epidemic, and also that of the winter of 1869, had proceeded from Persia, and that the disease had broken out at Nijni-Novgorod at the time of the fair and the arrival of Persian merchants.

"The question of the origin of the present epidemic has a very great importance with regard to the etiology of cholera. In fact, if, as I think, the actual epidemic is but a sequela of the importation of 1865, one of those relapses which are often observed in badly quenched foci, it is distinguished from preceding epidemics by its rapid progress. This exception goes to prove that cholera finds in Russia conditions favorable to its genesis and propagation. If, on the contrary, this epidemic had its origin in an importation from Persia, it comes then under the ordinary rule of epidemics of cholera due to a reimportation of the disease. This question deserves careful study.

"I now take up an exposition of facts. On September 5, 1870, the French Consul at St. Petersburg mentioned in official documents the development in that city of some isolated attacks of cholera. Physicians regarded these as nothing more than cases of cholera *nostrus*.

"During the last winter cholera seemed to have been almost completely extinguished in all parts of Russia; at least, nothing was heard of the disease.

"In February of the present year the disease appeared again in St. Petersburg, and in the month of March had acquired the character of a veritable epidemic. Up to the twelfth day of this month 500 attacks had been observed; the disease then progressed in the following manner:—

From 12th to 20th March	117 cases.
" 20th " 24th "	620 "
" 24th March to 1st April	216 "
" 1st to 12th April	206 "
" 12th " 22d "	43 "
" 22d April to 2d May	38 "
" 2d to 12th May	25 "
" 12th " 19th "	29 "
	<hr/>
	1294
	<hr/>
Deaths	754

"I have received no further statistics, but we know that from this time the disease continued to diminish until the month of July, when a fresh recrudescence, less severe than the former, was manifested. At the end of this month the daily number of fresh cases was about 50. So much are the residents of St. Petersburg accustomed to the presence of cholera, that they were but little disturbed by this epidemic. It should not be forgotten, however, that in St. Petersburg, of all the cities of Europe, cholera, when once imported, is maintained with the most tenacity.

"The cholera was not restricted to St. Petersburg; in the month of May it

appeared at Moscow, and in the surrounding country. During the summer it raged with some violence at Tambov, a city to the southeast of Moscow.

"The most serious fact, however, from our point of view, is the extension of the malady in the direction of the west. Since June cholera has shown itself in several towns of Russian Poland, chiefly at Wilna. A dispatch from St. Petersburg, dated July 29, has mentioned some isolated attacks at Suwalky, on the eastern portion of Prussia, not far from Königsberg.

"On another side, in the course of July, cholera made its appearance in the important maritime town of Riga, where about twenty cases were observed amongst sailors and workmen. This appearance of cholera at Riga is of special importance, from the fact of the extensive maritime relations of the port with England.

"From the little that we know at present of this epidemic, two important considerations can already be drawn. In the first place, it cannot be doubted that the cholera which has existed epidemically in Russia since 1869 is Asiatic cholera; the disease has all the characters and gravity of this form. It remains uncertain, however, whether this epidemic be a simple recrudescence of cholera which had not disappeared from Russia since its importation in 1865, or an instance of fresh importation. Secondly, this is distinguished from preceding epidemics by a greater benignity in relation to the number of attacks in the invaded localities, and by a milder progress. For these reasons, it is but slightly regarded in Russia, and looked upon rather as the tail of the preceding epidemic than as an actually progressive affection.

"Whatever may be the value of these opinions, so long as the disease has not attacked Germany, it is permitted us to hope that we shall escape an attack."

ART. 26.—On Cholera—its Pathology, Prevention, and Treatment.¹

By DANIEL W. PARSONS, M.D.

(*Liverpool Medical and Surgical Reports*, October.)

The pathology, Dr. Parsons stated to be a paralyzed condition of the sympathetic nervous system, caused by the introduction of a specific organic matter into some portion of the gastro-intestinal mucous membrane. For arresting the progress of the disease through the various members of a household, the author suggested liberal diet, a fair amount of rest, thorough and efficient ventilation, the maintenance of a high temperature (between 80° and 90° F.), the removal of all woollen fabrics, suspending throughout the rooms sheets soaked in a solution of carbolic acid, the immediate disinfection and removal of motions, vomited matters, and urine, and forbidding the use of drinking-water which has not been previously either boiled or filtered. Dr. Parsons also considered internal administration of carbolic acid most effectual in arresting the propagation of the disease.

In considering the *treatment* of cholera, the author adopted Macnamara's classification of the stages of the disease. He advocated the astringent treatment in the *first* stage, and suggested the advisability of combining carbolic acid with the opiates. In the *second* stage, he recommended large doses of capsicum (30 grs.) as an excellent stimulant to the sympathetic, through the mucous, capillaries; he also advised drinks acidulated with sulphuric acid, in order to neutralize the alkaline character of the rice-water fluid, and occasional doses of carbolic acid—also friction, or chloroform, to relieve the cramps. Turpentine stupes, and sinapisms, he said, did no good, as they could not reach or affect the seat of the disease. He considered that stimulants did no good, and often did harm in this stage, while opiates were worthless. In the *third* and *fourth* stages, Dr. Parsons urges the capsicum treatment, and when the medicine cannot be taken by the mouth, it should be given by the rectum. In the stage of collapse, advantage is likely to be derived from immersion in a saline bath, or

¹ Read at the Liverpool Medical Institution, Session 1870-71.

from enveloping the patient in sheets soaked in solutions of nitrate or chlorate of potash as likely to cause absorption through the cutaneous capillaries, and to supply the loss sustained by the deoxygenation and dehydration of the vessels. The treatment of the *fifth* stage, or that of reaction, should be very guarded. Stimulants should not be urged for at least four or five days, bland nutritious diet should be selected; and if suppression of urine should occur, the author advised cupping over the loins, together with small and repeated doses of tinct. lyttæ—10 drops every hour. The various sequelæ must be treated on general principles.

Dr. Parsons urged the use of Aitken's self-registering thermometer in all stages of cholera, as the best aid in diagnosing the various phases of the disease, and as the surest guide to prognosis. In the first stage the temperature remains normal, about 98° in the axilla, and from 97° to 98° on the tongue; in the second stage, the temperature of the axilla falls to from 95° to 97° , tongue 83° to 89° ; in the third stage, the axillary temperature falls to from 93° to 95° , sometimes even to 90° , while the tongue falls to from 85° to 87° , sometimes even to 82° . *In all cases that he had examined, there was a difference of 8° between the temperature of the tongue and that of the axilla.* He had seen only one case recover in which the axillary temperature was as low as 93° , and that of the tongue 85° ; and he had never seen a fatal case in which the temperature of the axilla was 96° or upwards. In the fourth stage there is a *sudden* rise of temperature to 98° , when death speedily follows. In the fifth stage there is a *gradual* rise to the normal standard.

ART. 27.—Intemperance a powerful Predisposing Cause of Cholera.

By ROBERT MARTIN, M.D.

(*Medical Press and Circular*, August 30.)

At the thirty-ninth annual meeting of the British Medical Association, Dr. Robert Martin, of Manchester, read a paper intended to show that intemperance is a powerful predisposing cause of cholera. Indigence, overcrowding, and filth are often caused by intemperance, which is, therefore, responsible for outbreaks of disease; but, in addition, Dr. Martin thinks that the poisonous effects of alcoholic liquors directly favor the development of zymotic agents. During the cholera visitation of 1832, the nurses in the Manchester Cholera Hospital were at first allowed to go home each day at certain intervals. This arrangement gave them the benefit of a certain amount of out-door exercise and change of atmosphere, as well as relieved the tedium of their duties; the mortality, however, amongst them was so great that it was feared that the supply would fail. It was discovered that, with the idea of protecting themselves against the disease, they indulged freely in liquors; they were, therefore, confined to the hospital, and debarred from obtaining more than a small allowance of alcoholic drink, after which not a single fresh case occurred amongst them. Here we see that, notwithstanding far less favorable hygienic conditions, there was an immunity from cholera attacks when there was a greatly diminished consumption of alcohol. The experience of Dr. French as Medical Officer of Health, for Liverpool, was cited in support of this view, and Dr. Martin urged that in taking means for preventing the advent or spread of cholera, the utmost efforts should be used by the authorities for limiting the facilities for procuring intoxicating liquors. When an attack is impending, intemperance ought to be most stringently dealt with. The drunkard is a source of the greatest danger to himself and the community. The utmost efforts of the authorities, and the most lavish expenditure of funds, may be neutralized by the reckless conduct of a few intemperate persons. Every means ought, therefore, to be taken in order to prevent drunkenness, and incentives to intemperance should be as far as possible suppressed.

ART. 28.—*On the Causes of Death in Variola.*

By M. HENRI HUCHARD.

(Archives Générales de Médecine, Nos. 2, 3, 1871.)

M. Huchard concludes his elaborate memoir on death in variola with the following remarks:—

"In *confluent* variola, termination by death is the rule, recovery the exception. This prognosis, first pointed out by Sydenham, reproduced by Trousseau, and too much neglected in recent times, has been lately referred to by M. Desnos. During the whole course of the recent epidemic in Paris, but three cases were observed of recovery from confluent variola. This mortality, though enormous, ought not to surprise us, for in this severe form of the variolous disease, which presents the most marked morbid complexion, we find associated all the causes of death to which allusion has been made in this memoir. On the one hand, primary septicæmia determines a profound change of the blood, and very frequently gives rise to the early lesions of a cardiac affection, which do not fail to carry off the patient rapidly or suddenly during the third stage of suppuration, frequently before the eleventh day. On the other hand, if the variolous patient should by a rare chance escape the former danger, he is exposed during the stage of maturation to accidents almost always fatal, which are caused by secondary septicæmia and asphyxia.

"In *coherent* variola, the crisis of the blood is already less altered by the introduction of the virus into the economy; the cardiac complications are less frequent, the secondary septicæmia less profound; the skin may still perform its functions, the reabsorption of the putrid materials of suppuration, and the organic waste of fever is less complete; the patients usually succumb to accidents of asphyxia, caused by the development of pustules on the mucous membrane of the air-passages.

"In *discrete* variola, spontaneous recovery occurs in almost every case, a fact which is explained by the attenuation of primary and secondary septicæmia, and by the extreme rarity of cardiac and laryngo-bronchial affections.

"There are two kinds of hemorrhagic variola; one kind—the primary hemorrhagic variola, is always fatal, as the blood from the first is completely changed by the virus. The second kind—secondary hemorrhagic variola, is serious, but may be recovered from; in this form, hemorrhage is symptomatic of a secondary change in the blood. With regard to the want of accord which, in all cases of variola called malignant, has been noted between the pathological lesions and general condition, we believe it would be nearer the truth to say that it exists only between our ignorance and science."

ART. 29.—*Suggestion as to the Treatment of Hemorrhagic Smallpox.*

By JOHN AIKMAN, M.B., late Assistant Medical Officer, Hampstead Smallpox Hospital, London.

(Glasgow Medical Journal, August.)

Mr. Aikman states that, in the hemorrhagic form of smallpox, he has observed the most beneficial results from the administration of two tablespoonfuls of the following mixture every three hours:—

R. Liquoris strychniæ,
Tr. ferri muriat., ℞ ℥j.
Inf. quassia, ad 3 viij. M.

ART. 30.—*Management of Measles.*

By N. S. DAVIS, M.D.

(The Medical Record, July 1.)

Dr. Davis, of Chicago, considers the following formula one of the best preparations in the first stage of severe cases of measles: R. Syrupi scillæ comp., ℥jss; vinum antimonii, ℥ss; tinct. opii camph., ℥ij; tinct. verat. viride, ℥j. M. Dose, one teaspoonful every three hours in a tablespoonful of water.

This will, usually, in the course of twenty-four hours, lessen the fever and modify the cough, while the pain in the head will at the same time be greatly relieved.

He is not in the habit of giving cathartics until the eruption is fairly out; when, if the bowels have not moved for a couple of days, he directs a mild laxative like the following: R. Hydrarg. chl. m., gr. v; leptandrin, gr. ij; sodæ bicarb., gr. v. M. One important thing to guard against is extension of the irritation from the bronchial tubes to the lobules of the lungs; making it complicated with lobular pneumonia. When symptoms of pneumonia occur in connection with measles, the best remedy in children is a combination like the following: R. Liq. ammon. acet., ℥jss; syrup. ipecac., ℥ss; tinct. opii camph., ℥j; tinct. verat. viride, ℥j. Dose—proportioned to the age of the child: for a child two years old, about twenty drops, though it is best to begin with ten drops; for an adult one teaspoonful. It should be given every two, three, or four hours, till the fever is controlled. In the active stage of the disease, while using this mixture, cover the chest externally with fomentations.

Dr. Davis has considerable faith in the popular notion about onions; they certainly afford more relief to the breathing than any other thing. He attributes it to the impregnation of the air which is inhaled, with the volatile oil, more than to any absorption from the surface of the chest, and thinks this application preferable to blistering.

ART. 31.—*On the Treatment of Scarlet Fever.*

By EDWARD COPEMAN, M.D., M.R.C.P., Physician to the Norfolk and Norwich Hospital.

(St. George's Hospital Reports, vol. v., 1870.)

The treatment of this disease, and the practical conclusions at which Dr. Copeman has arrived, after many years of experience, are the following: Keeping in view the low type of diseases in general at this period, he believes that in mild cases, where no local complication of urgency appears, little more is required than free ablations, free ventilation, a mild alterative aperient, and a little simple fever mixture, with sp. æth. nit. to keep the kidneys in action. For the relief of those severe cases in which there is a profuse ichorous discharge from the throat and nostrils, with disposition to sloughing ulcers in the pharynx, he has seen no local remedy so successful as the free application of a solution of nitrate of silver (from four to eight grains to an ounce) by means of a brush or syringe. With regard to the large and deep abscesses which so frequently occur in the salivary glands, and present externally, Dr. Copeman believes the best plan is simply to foment or poultice them, and let them break of themselves. This he has tested in several instances in the same individual, when abscesses had formed on both sides of the neck, and especially in one instance in which a very large abscess formed below either clavicle in a young girl after a very dangerous attack of scarlet fever. He has opened them on one side, and left them to discharge themselves on the other, with the invariable result of a quicker recovery, a smaller scar, and less constitutional disturbance under the latter plan; so that he has now made it a rule of practice

never to have them opened artificially, unless they are so situated that important parts are in jeopardy. With respect to the constitutional treatment of scarlet fever in its severer forms, there are perhaps few better medicines than small doses of dilute hydrochloric acid in camphor mixture or decoction of bark. Opiates are objectionable on account of masking the head symptoms, but are sometimes required to overcome pain or restlessness; and as a means of avoiding or lessening the objection, Dr. Copeman has found a much smaller dose of opium, conjoined with a little v. ant. tart., produce the desired effect, than if opium were given alone. Port wine, brandy, and animal broths will in most cases be found indispensable; and when the stomach is irritable and refuses these, frequent small quantities of milk and lime-water, the latter in proportion of one-third. If counter-irritation be required on account of an internal inflammation or congestion, the author prefers turpentine, applied to the skin on flannel, to blisters, which he has more than once seen productive of great distress and danger on account of the low state of vitality of the surface with which they have been in contact. One of the most common of the sequelæ of scarlet fever is dropsy, with albuminous urine; an untoward complication, and one which generally supervenes at a time when all idea of danger has been removed, or most probably in cases where no danger has been apprehended. It occurs more frequently after mild cases; and early exposure to cold during convalescence appears to be the most frequent cause. Many years ago the author published a short paper on scarlatina in the *Medical Gazette*, vol. xxx. p. 96, chiefly with reference to the treatment of the dropsy which often supervenes. He there remarked that "this affection (dropsical effusion) is generally considered to be of an inflammatory character; and bloodletting and other antiphlogistic remedies are recommended for its removal. The general success of such measures is also established by the concurrent testimony of various authors; but during the late epidemic I had occasion to treat the disease in patients who had been so much debilitated by the previous attack of fever, that I had not the courage to further reduce the powers of the constitution." Dr. Copeman was then induced to make a trial of iodine, which he prescribed in the form of Jugol's solution (now in the form of the liq. potas. iodid. comp. of the London Pharmacopœia). Of this solution he ordered from five to ten drops for children, and from ten to twenty-five to adults, three times a day, in water. In the first case in which it was used it rapidly effected a cure, in consequence of which he prescribed it in every succeeding case that presented itself, and with the same complete success.

ART. 32.—*Acute Dropsy, Scarlatinal and Idiopathic.*

By H. C. Wood, M.D.

(*American Journal of Medical Sciences*, July.)

Dr. Wood, of Philadelphia, writes to combat the theorem of Prof. Hughes Bennett—viz., that "serous effusion or dropsy is always indicative of mechanical obstruction to the return of the blood from the capillaries through the veins." Wood argues that this theory is not proved, and even not probable; that the evidence, as far as it can at present be made out, shows that a large proportion, if indeed not all acute dropsies, are due, not to a mechanical impediment to the circulation, but to a peculiar condition of the cellular tissue, whereby its natural secretion or exhalation is enhanced, so that the water may be said to be actively thrown or drawn out from the vessels. To establish this, he endeavors to prove the following propositions: (1) There are œdemas local in character—e. g., the œdema of erysipelas—which cannot be caused by any mechanical interference with the circulation, but which are evidently connected with a state of irritation of the cellular tissue of the part affected, which irritation is sometimes absolutely local in character, sometimes evidently dependent upon a constitutional blood affection. (2) That the dropsy of scarlet fever is mostly, if not always, independent of—i. e., not caused by—the disease of the kidney." In proof of this, the author quotes a number of authors who describe cases and forms of

scarlatinal dropsy without albuminuria. "(3) There are cases of idiopathic general anasarca absolutely resembling those associated with acute desquamative nephritis, and produced by the common cause of the latter, in which however there is no disturbance of the kidneys, nor of the heart, lungs, or liver." This proposition he supports by cases observed by various authors and by himself. "(4) By the use of a certain drug or drugs we can produce general anasarca without albuminuria, to be followed by the presence of both albumen and tube-casts in the urine, if the use of the poison be persisted in, showing that the anasarca and the kidney trouble are the results of a common irritant cause, unless it be asserted that the anasarca produces the albuminuria." The action of arsenic in the production of cedema is here referred to, and observations in support are quoted from Stillé and Weir Mitchell. "(5) The non-albuminous dropsy of scarlet fever is not anæmic in its origin, but dependent upon irritation of the cellular tissue." The inconstancy of dropsical effusion in anæmia, and the fact that non-albuminous scarlatinal dropsy may attack parts—e.g., the face first, independent of gravity—that it is sudden in its onset and profuse, and that it is cured by remedies which would produce anæmia, are arguments adduced in support of this proposition. The following are the author's conclusions: (1) That in acute Bright's disease, whether originating from scarlet fever, arsenical poisoning, or cold, the dropsy is not the result of the kidney disease, but, with the latter, is dependent upon a common cause. (2) That an irritant poison, organic or otherwise, may give rise to dropsy without other appreciable organic disease. (3) That exposure to wet and cold may produce dropsy, without other disease, and that there is therefore such an affection as acute idiopathic dropsy. (4) That acute dropsy is mostly, if not always, the result of irritation of the cellular tissue.

ART. 33.—On the Etiology of Typhoid Fever.

By P. W. LATHAM, M.D., Fellow of Downing College, Cambridge ;
Physician to Addenbrooke's Hospital.

(*The Lancet*, July 15.)

The theory which Dr. Latham's own experience leads him to support is as follows: 1. That *almost* invariably the disease proceeds from a special poison contained in the alvine excreta. 2. That this poison is *directly* introduced into the alimentary canal, either in the food, or, most generally, in the water drunk. 3. That it is not yet proved that the poison is contained in, or disseminated by, the exhalations from drains, privies, &c., or that it can be absorbed into the system through breathing air contaminated with such exhalations.

With regard to the treatment of typhoid fever patients, Dr. Latham makes two practical suggestions: 1. That every evacuation, as soon as passed, should be disinfected with carbolic acid. 2. That no surface well-water or pump water, whether boiled or not, should be used in a district where there are any cases of typhoid fever, but that all drinking-water should be obtained from some spring not liable to contamination. This precaution is of the greatest importance to the patients themselves. Dr. Latham is quite sure that neglect of it gives rise to many of the relapses in typhoid fever cases, perhaps more frequently than any other cause except the too early administration of solid food. And with respect to this last point Dr. Latham points out the supreme importance of the thermometer in telling us when solid food may safely be given. It should not be given until the temperature of the patient at 8 A.M. and 6 P.M. has remained for two days at least about the normal point, or between 98° and 99° F. The patient's tongue may be clean and moist, the appetite ravenous, the patient crying out for food, and yet the typhoid ulcers still unhealed. The thermometer alone will tell us this; it will probably show at this stage an evening temperature of about 101° F., with a morning temperature of about 1°·6 to 2° lower; and a mutton-chop now might be sufficient to

induce fresh irritation of the intestinal ulcers, fatal hemorrhage, or perforation. It is only after the evening temperature has remained, on at least two successive days, below 99° F., that we can be sure that the ulcers have healed, and that solid food may be given without risk.

ART. 34.—*Typhoid Fever treated with Strychnia.*

By JOHN E. OWEN, M.D., Chicago.

(*The Medical Record*, August 15.)

Dr. Owen observes that during the last four years, both in hospital and private practice, milk and the acid and strychnia mixture have been administered to patients with typhoid fever with success. The mixture is prepared as follows: R. Acid. sulph. arom., ʒij; strychniæ sulph., gr. $\frac{1}{12}$; syrup. simpli., ʒv. M. Dose, a tablespoonful. There is one noticeable feature in cases treated by strychnia—viz., the dry, brown tongue soon becomes moist, and remains so during the treatment; this is effected, he believes, mainly through the agency of strychnia, by increasing the nutritive and assimilative functions of the system.

ART. 35.—*On the New Pathology of Tubercle.*¹

By ALEX. DAVIDSON, M.D.

(*Liverpool Medical and Surgical Reports*, October.)

The author commenced with some introductory remarks, contrasting the old doctrine promulgated by Laennec with Niemeyer's new theory, and then proceeded to consider the new facts relating to tubercle, and the arguments derived from them, which led to this change in opinion.

1. The facts and arguments derived from pathological anatomy.
2. Those drawn from experiments.
3. Some observations on general pathology bearing on the question.

Regarding then what the *study of pathological anatomy* in recent times has taught us about tubercle, Dr. Davidson remarked that it had shown that cheesy matter does not constitute tubercle. This cheesy matter, which for a long time was considered as typically tubercular, has been found to be the result of the transformation of various pathological products, and not of tubercle alone. It might be merely inspissated pus—several examples of the contents of old abscesses, having become cheesy, had been exhibited to the Society during the session. The so-called tubercle corpuscles are merely the shrivelled-up cells of the structure which has undergone this cheesy transformation—it may be tubercle, pus, or cancer—cheesy matter is not therefore necessarily tubercular. True tubercle often becomes cheesy, but not always. It may become fatty or calcareous.

In the next place, calcareous matter is not of necessity a result of tubercle. In the third place, scrofula is not tubercle. Scrofula and tubercle have been confounded with one another, partly because scrofula is liable to the same cheesy transformation, and so contains the same shrivelled-up corpuscles as tubercle. But Virchow has proved that while scrofula is hypertrophy of existing lymphatic glands arising from some neighboring irritation, tubercle is a new growth, having the same histological structure as a lymphatic gland, but occurring where no gland previously existed. He classifies tubercle among the lymphomata, or tumors having the structure of a lymphatic gland. This essential character of tubercle is seen only in the early stage, when it is milinary, and before it has undergone the cheesy transformation. More recently, Dr. Burdon Sanderson has shown that this lymphoid, or as he terms it, "adenoid," tissue exists normally in the parts most liable to tubercle, and that tubercle

¹ Read at the Liverpool Medical Institution, Session 1870–71.

may be merely an hypertrophy of this previously existing tissue. The anatomy of tubercle being thus defined, the next point for consideration is how it originates.

Laennec's theory attributed the occurrence of tubercle to a diathetic condition of the system, which led to the spontaneous deposit of tubercle in the lungs and other organs. But recent experiments have thrown an entirely new light on the subject.

Experiments on the Inoculation of Tubercle.—A short historical account of this branch of the subject was next given. Villemin succeeded in producing tubercle in rabbits by inoculating them with tubercular matter obtained from the human lung, and he considered tuberculosis to be a zymotic disease. Dr. Davidson detailed some experiments he had made, which were of the same character as those of Villemin, and exhibited some preparations from the animals operated on. The researches of Drs. Wilson Fox and Burdon Sanderson appear, however, to disprove Villemin's theory. These observers found that while the inoculation of tubercular matter was the most successful means of producing tubercle in animals, still that other means, such as the inoculation of putrid muscle, or even the irritation of a seton, would produce the same result. The general and microscopical characters of the indurations resulting from such inoculations were then described. It was shown that both at the site of inoculation and in the internal organs the indurations resulted from a growth of adenoid tissue. The viscera became, however, affected by some material being taken up from the site of inoculation by the vessels, and carried through the system. Various theories had been held regarding the nature of this material. Villemin supposed it was a specific poison, like that of small-pox; and, indeed, notwithstanding the experiments of Wilson Fox and Burdon Sanderson, this view, though rendered improbable, has not been absolutely disproved, seeing that in their experiments the air was not excluded. Cohnheim considers caseous pus to be the material, while Lebert thinks it is of a chemical nature. There is not yet sufficient evidence to determine this question.

From these experiments conclusions were drawn by Dr. Davidson with regard to the contagiousness of tubercle, and with regard to the cause of the different susceptibility of animals and of individuals to tubercle. The principal conclusion, however, was that tubercle in internal organs is a secondary affection, and that a primary source of irritation exists in the body.

Lastly, how does the *general pathology of tubercle* support these conclusions? In consequence of the length to which the paper had already reached, it was impossible to discuss this part of the subject fully. Reference was made shortly to Buhl's observations regarding acute military tuberculosis, and to the views of Niemeyer, Waldenberg, and Burdon Sanderson on pulmonary phthisis.

The paper concluded with the observation that the real nature of tubercle was still undecided, and that further experiments, and more accurate clinical and pathological observations of tuberculosis, were still required.

SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 36.—*On the Prevention of Insanity; the Treatment of the Insane in Private Houses and Asylums; and the Use and Abuse of Sedatives in the Treatment of Insanity.*

By HENRY MAUDSLEY, M.D., F.R.C.P.

(*Medical Press and Circular*, August 16.)

At the twenty-first Annual Meeting of the Medico-Psychological Association, Dr. Maudsley, the President, delivered the address.

He considered the question of the prevention of insanity, although a most

important one, had hardly ever been seriously propounded. Luckily for us, insanity, unlike some other fearful diseases, could not be conveyed by man to his fellow-man by infection or contagion; but, on the other hand, it was of all diseases the one most likely perhaps to be inherited by one generation from that preceding it. Then, again, it was a disease of so fearful a nature, affecting the highest and most distinctive of man's attributes—mind—that the sufferer from it was regarded as having really sustained a fall from man's high estate, and his relatives accordingly often strove their hardest to conceal the fact. If we had certain animals who were deficient in what ought to be their chief characteristics—greyhounds, for instance, who could not run fast, or race-horses who were deficient in speed or staying power—should we make choice of these for the purpose of propagation? Certainly not. Then the question arose, ought we to permit men in whom there was a tendency toward mental alienation to marry? This was a most difficult question, by reason of the different degrees of liability to insanity which necessarily existed in different individuals. Then, again, the phenomena of atavism and the alternation of neuroses very much complicated the question. For instance, the son of a madman may escape, and the grandson be utterly insane; and the offspring of epileptic or neuralgic parents may show very strong tendency towards insanity. Again, it had been remarked that the offspring of the insane had not unfrequently been men of great genius, and hence the question arose whether, by forbidding the marriage of a man with tendencies towards insanity, we might not be depriving the world of a mind which would more than compensate for innumerable mental aliens. The descendants of the insane are often very original thinkers. They explore the little-trodden paths of knowledge, they have often indomitable energy, and are careless of all obstacles. Dr. Maudsley thought that if a man had actually had an attack of insanity, we ought to use all our powers of persuasion to prevent his marrying, but in other cases he did not recognize the utility of interfering. He thought that not much was to be done for the prevention of insanity by prohibiting marriage, but that more could be done by the careful and scientific education of the children of the insane. No person predisposed towards insanity should be considered as a helpless victim to his fate. A man can, to a certain extent, by sheer force of his will, make his character grow to the ideal he sets before himself, and, undoubtedly, a great deal is to be done by the careful mental training of those predisposed towards insanity. The insane themselves, it is well known, have at times a great power of control over their actions; and, *a fortiori*, those who are merely predisposed towards insanity should be likewise able to exercise this control. Unfortunately, as a rule, children with an hereditary taint are always worse managed than other children, and are, therefore, doubly cursed.

With regard to the treatment of insane persons, Dr. Maudsley thought that the fashion of at once dispatching a lunatic to an asylum, should by no means be necessarily followed in all cases. Many cases recover without ever being sent to an asylum, and many cases were on record which baffled all treatment whilst resident in an asylum, but rapidly recovered after effecting their escape. M. Comte was a notable instance of this. He was an inmate of Esquirol's asylum, but, managing to effect his escape, he recovered and wrote his famous work on "Positive Philosophy." On the whole, Dr. Maudsley thought that only in a very few cases was it absolutely necessary to send the patient to an asylum. The recovery of many patients was retarded by the absence of "home influence," and the utter banishment of their friends and relatives which was entailed upon them. It was unfortunate that the treatment of the insane had become such a narrow specialty, and it would be an excellent thing if the state would authorize medical men to receive a very small number, say two or three, insane patients into their houses. He believed that patients placed in this position would be more likely to do well than those who were sent to larger establishments.

Disputing the use and abuse of sedatives, Dr. Maudsley doubted if it were always a wise thing to stifle excitement, and whether a chemical restraint put upon the brain-cells was not often as injurious to the patient as a mechanical restraint imposed upon his limbs. He thought that sedatives were given far

too recklessly, that, although they might relieve symptoms, they often only served to push the patient further down the hill, and, as often as not, retarded recovery. He thought the whole range of sedatives, including bromide of potassium and the hydrate of chloral, were all equally capable of being abused; that by giving them we often materially damage the patient's general health, and, instead of curing, we often merely "made a solitude, and called it peace."

ART. 37.—*The Brains of the Insane.*

By J. BATTY TUKE, M.D.

(*Medical Press and Circular*, August 16.)

At the forty-first Annual Meeting of the British Association, Dr. J. Batty Tuke read a paper on the Morbid Appearances noticed in the Brains of the Insane. He pointed out the importance of localizing brain function, and that the means to this end at the disposal of the physiologist were nearly exhausted. Comparative anatomy had done its work; and experimentation, although it had done much to demonstrate certain leading facts of importance, had left much which was doubtful, and more that it had not attempted to explain. Moreover, sources of fallacy existed in this method of inquiry from the difficulty which existed of localizing artificial injuries, and of reaching deep-seated portions of the brain. Disease, however, injured in a finer and more delicate manner than the knife, and it was held that much might be elicited regarding the functions of the brain by observing the parts of the organs implicated in disease, and the perversions of the nervous system which are associated with them. It being generally acknowledged that the intellectual powers are manifested through the gray matter of the cerebrum, and as in insanity these faculties were impaired, exaggerated, or perverted, the author asserted a belief that by examining the brains of the insane a hope existed of discovering a road for arriving at a solution of the functional difficulty. The time had passed when the term mental disease, insanity, or madness conveyed to the minds of physicians the idea that the psyche, the mind, or its faculties, were the entities which were the subjects of disease. By a process of ratiocination rather than of demonstration the pathologist had arrived at the conclusion that abnormal physical manifestations are dependent upon primary or secondary morbid changes in the nerve tissue; that insanity is a symptom of disease, not a disease itself, and that in the brain the *materies morbi* must be looked for. Six years ago the author commenced a systematic microscopic examination of the brains of the insane, and with this most important result, that in every single instance a marked departure from healthy structure was observed. The process by which the brain matter was made fit for the microscope was related, also a list of twelve different parts of that organ which had in a majority of the cases been examined. The morbid appearances may be classified under the following heads: Changes—1st, in the neuroglia; 2d, in the nerve cells; 3d, in the nerve fibre; 4th, in the bloodvessels; 5th, granulation in surface of cerebral convulsions, &c.; and 6th, amyloid and colloid bodies. After describing the various forms of disease, which were illustrated by diagrams and microscopic sections, the paper concluded with the following statements: We are not prepared to designate the individual parts of the brain specially affected in different forms of insanity; but we may say generally, that the corpora striata are the portions most frequently found affected, and that the cerebellum is the organ least frequently subject to disease. Further, that the white matter is much more liable to evident structural morbid change than the cortical substance in comparatively recent cases, and that where the intellect has been in abeyance for prolonged periods, the structure of the gray matter of the cerebral convolutions is difficult of demonstration, the layers are found indistinct, as the cells are few in number and generally small in size. We do not wish it to be thought that we have found in cases of insanity any changes in the cerebrum which may not be found in other parts of the central nervous system in diseases not involving the intellect. The seat of these morbid conditions is the great

point to be considered in the different cases ; and in this direction we propose immediately to direct our attention by analyzing the series of microscopic sections at our command ; 2d, by carefully comparing the physical signs observed during life with pathological conditions. The great conclusion to which our researches have as yet led us is, that in the fifty-three cases of chronic insanity which we have examined, we have found distinct structural changes in the brain of each. This in itself is a fact having a most important bearing on the physiology of the brain, and one which, if followed up, may be reasonably expected to dissipate much of the mystery which hangs over the functions of its various parts. Our object in bringing this paper before the Association is the hope of enlisting others in an inquiry which is so vast that we feel a host of investigators will be needed to prosecute it.

ART. 38.—*On Hysteria and its Various Interpretations.*

By E. J. TILT, M.D., M.R.C.P.

(*The Lancet*, August 12.)

At the thirty-ninth Annual Meeting of the British Medical Association at Plymouth, Dr. Tilt read a paper on the above subject. He began by remarking that writers on hysteria might be divided into two groups: a comparatively small group of writers, who owned their ignorance of diseases of women, and who nevertheless affirmed that uterine affections had nothing to do with hysteria; the contrary doctrine being held by the great majority of writers, those who were admitted to be thoroughly acquainted with diseases of women. The author quoted from the lectures of Dr. King Chambers, Dr. Russell Reynolds, Dr. Handfield Jones, and Dr. Hyde Salter, to show what was taught respecting hysteria by those little conversant with diseases of women. He then showed how this ignorance on the part of the leaders of the profession, and the teachers in public schools, injuriously affected their own interests, the welfare of their patients, and the advance of medicine. Dr. Tilt objected to identify hysteria with lust, and also to the common practice of calling hysterical any inexplicable symptom that may occur in women. Lastly, the author explained hysteria as the product of an indispensable predisposition to emotion on the part of the brain, and some determining cause. This determining cause was said to be sometimes one of those debilitating influences that aggravate all nervous affections. Sometimes the cause is the disturbed action of one of the abdominal viscera, the reflex centres of our emotions, diseases of menstruation, in which slight structural diseases of the ovary find expression, and the mildest forms of uterine disease being given as the most frequent determining causes of hysteria. Dr. Tilt's conclusions were—(1) that to be efficient leaders of the profession and teachers in our public schools, hospital men should be thoroughly acquainted with diseases of women; (2) that whenever it is a question of hysteria, the state of menstruation should be carefully ascertained, and the sexual organs accurately examined when they present signs of disease; (3) that the best way for neurologists to disperse the cloud that still obscures our knowledge of hysteria, catalepsy, and epilepsy, is to study the pathology of the ganglionic nervous system.

ART. 39.—*Treatment of Hysterical Mania.*

By J. CRICHTON BROWNE, M.D., F.R.S.E., Medical Director, West Riding Asylum; Lecturer on Mental Diseases to the Leeds School of Medicine, &c.

(*British Medical Journal*, August 5, 1871.)

The treatment of hysterical mania, Dr. Browne writes, requires a careful adaptation to varying conditions. Its occasionally transitory nature justifies a trial of home-treatment before an asylum is resorted to; but if under home-

treatment it remains unabated at the end of fourteen days, then removal should not be any longer delayed. The most protracted and troublesome cases that have fallen under Dr. Browne's observation have been those in which home-treatment had been persevered in for months, until patience had been exhausted. The prolongation of the disease increases the risk of relapse, so that it is of much importance to cut it short at the earliest possible moment. During the maniacal condition there is not much room for moral treatment. A conciliatory and yet firm manner on the part of the physician, however, is not without its effect. Quietness and rest are also advantageous, and any simple occupation, such as sewing, if its adoption can be secured during an interval of tranquillity, is often very useful. It fixes attention, and by its very monotony soothes the perturbed mind. Exercise in the fresh air ought to be taken daily, and nourishing food must be administered. The medical treatment Dr. Browne generally begins with is a mixture containing bromide of potassium and tincture of valerian—forty grains of the former and a drachm of the latter in each dose, to be taken three or four times a day. This has sometimes a most gratifying effect; if, however, its beneficial action be not very speedily manifested, no good will result from continuing its employment. Dr. Browne recommends us, then, to resort to morphia and assafoetida. From a quarter to half a grain of the muriate of morphia, with from ten to thirty grains of assafoetida, may be given twice or thrice a day. The tincture of assafoetida is not objected to in pauper asylums. This treatment is generally successful; but should it fail, as it sometimes will, then *cannabis indica* with bromide of potassium ought to be tried. The use of narcotics is not contra-indicated in hysterical mania. Warm, tepid, and even cold shower baths are sometimes composing and useful. During convalescence, iron is most always required, sometimes quinine also. Dr. Browne has a particularly high opinion of the value of Easton's syrup of the phosphates of iron, quinine, and strychnia, during recovery from hysterical mania. Of course, menstrual disorders must be subjected to their appropriate treatment.

ART. 40.—On the Growth of Nails as a Prognostic Indication in Cerebral Paralysis.

By S. WEIR MITCHELL, M.D.

(*American Journal of the Medical Sciences*, April.)

Dr. Mitchell observed in a lady, aged fifty-six, the subject of an attack of left hemiplegia—from which she recovered to a great extent—that during her illness the finger-nails on the left side, which were previously healthy and rather large, became marked with deep serrations crossing from side to side, and about one line apart. The peculiarity remained while she was under Dr. Mitchell's care, and the growth of these nails was much slower than that of the nails of the healthy arm. In consequence of this observation, Dr. Mitchell determined to study the nail-growth in similar cases. The first case he relates was that of a gentleman aged forty-seven, who had a severe attack of apoplexy. "The morning after his attack I stained four of the nails of the palsied right hand down to the lower edge with nitric acid, hoping thus to learn whether they would grow as fast as those of the other side. To my surprise, while the left healthy nails grew as usual, the right nails did not grow at all during three weeks. Then, and while the arm was throughout still motionless, the nails began to grow, as was shown by a line of white below the tinted portions. Within a week after this the fingers became controllable by the will, and gradually the whole hand, and then the whole arm was restored, so as to perform any except the most delicate tasks." The third case related by Dr. Mitchell was that of a gentleman who, after great mental excitement, became paralyzed as to motion only in the right arm and leg on October 16th. On the fourth day after the attack Dr. Mitchell stained the nails, the hand being "motionless." Not the slightest growth took place on the palsied side until November 2d, when, seeing a line of white above the quick, Dr. Mitchell predicted that within

a week he would begin to move the limb. On the fourth day the thumb recovered some slight power, and the rest of the limb rapidly followed it, so that every muscle was under control on November 9th, although for some time the extensors of the fingers moved with difficulty, because of the continued but lessening spasm of the flexors. The author remarks that in old cerebral palsies the nails are often deformed, and even the muscles may undergo changes which are possibly due to the neural sclerotic alterations which sometimes come on after the part has been long disused. These changes are the direct result of isolation from special trophic influence. In recent cerebral palsies it is more remarkable that the nails should suffer in their nutrition, as there is no muscular atrophy. In parts whose nerves are severed the nails grow as usual. In partial nerve wounds we meet with clubbing and serration. Dr. Mitchell thinks that the injury to the brain exerts an inhibitory influence, and that the fact is in favor of the existence of nutritive nerves. He does not admit that the checked growth is due to contraction of the vessels from a vaso-motor nerve impression, because no conceivable amount of such spasm could last long enough without altering the tint of the nail. To test this view, however, he faradized two of the nails daily, causing great pain, and intensely flushing them, but no more growth took place in those nails than in the others. In one case a lower temperature of the affected hand was noticed during the attack, but in hands cut off from all nerve-connection the temperature is still lower, and yet the nails grow.

ART. 41.—*Phosphorus in Wakefulness.*

By WILLIAM A. HAMMOND, M.D.

(*Boston Medical Journal*, September 7.)

Dr. Hammond recommends twelve grains of phosphorus to be boiled in one ounce of almond oil, and filtered. Half of this is to be mixed with an ounce and a half of gum arabic, adding fifteen drops of some aromatic oil. Of this mixture the dose is fifteen drops, containing one twenty-fourth of a grain of phosphorus. Three doses are given before bedtime, sleep being generally produced on the second day if not on the first. The dose may be increased a drop daily until twenty drops are taken, or signs of gastric irritation supervene.

ART. 42.—*Ophthalmoscopic Signs of Spinal Disease.*

By T. CLIFFORD ALLBUTT, M.A., M.D. Cantab.

(*The Lancet*, January 15.)

Dr. Allbutt, in reviewing the facts as they are known at the present time, adds to them his own observations. He says, in eight-and-thirty well-marked cases of spinal injury, secondary disturbance within the eye was found. These changes do not become established in the cases which run a short course, but they slowly supervene in the course of weeks or months in more chronic cases. In spinal diseases arising from injury, the higher the seat of injury the sooner are these changes in the eye. The (ophthalmoscopic) morbid appearances he arranges in two heads, the second including the traumatic cases: 1. Simple or primary atrophy of the optic nerve, sometimes accompanied at first by that slight hyperæmia and inactive proliferation which make up the state Dr. Allbutt has called chronic neuritis. This sort of change he has never found as a result of spinal injuries, but he has often met with it in chronic degeneration of the cord, and in locomotor ataxy. 2. A somewhat characteristic hyperæmic change, not seen in chronic degeneration or in locomotor ataxy, but in cases of injury of the spine only. The retinal arteries do not dilate, but become indistinguishable, while the veins begin to swell, and become somewhat dark and tortuous. The disk then becomes uniformly reddened, and its borders are low, the redness or pinkness commencing with increased firm vascularity at the inner border, which

then invades the white centre and the rest, so that the disk is obscured, or its situation known only by the convergence of the vessels. In many cases, rather than redness, he has observed a delicate pink—pink which sometimes passes into a daffodil color. It ends in resolution rather than in atrophy. Sometimes the sight suffers a good deal in these cases, sometimes but little or scarcely at all. He has not seen the true optic neuritis, with active proliferation, as a sequel of spinal disease. As to the processes connecting the changes in the spine and in the eye, the author in the first place objects to Professor Wharton Jones's recent explanations of injury to the cord causing the sympathetic nerve or its origins to be involved, and so are, consequently, the bloodvessels and nutritional changes superinduced in the eye. He also objects that he has not observed, ophthalmoscopically, the dilatations of the arteries at and above the disk, to which Mr. Jones alludes. Can a palsied sympathetic be the ruin of the optic disk, when its effects are unseen in the pupil, unseen in the conjunctiva, unseen in the ear and cheek? Again, he says, "It is a matter of verified observation, in numerous cases in which there have been most obvious signs of a palsied sympathetic in the ear, face, and outer eye, that in these very cases the back of the eye has been found unchanged." He is led towards the conjecture that hyperæmia of the back of the eye, following injury to the spine, is probably dependent upon a greater or less extension of the meningeal irritation up to the base of the brain. Spinal meningitis does creep up to the encephalon, and if this ascending meningitis be the correct explanation, it accords with his observation that, in general, the higher the injury to the spine the sooner the affection of the eye. Atrophy of the disks is seen, not in injuries of the spine, but in slow degeneration of the cord—in cases, that is, where meningitis is usually absent or inactive, and it is seen most frequently by far in that degeneration of the cord called sclerosis of the posterior columns—of that part of the cord which tends to travel towards the encephalon, and not towards the periphery, up to the cerebellum.

ART. 43.—*The Influence of the Mind upon the Body.*

By DANIEL H. TUKE, M.D., M.R.C.P.

(*Journal of Mental Science*, October.)

After a number of interesting illustrations, Dr. Daniel Tuke lays down the following conclusions:—

1. Thought strongly directed to any part, tends to increase its vascularity, and, consequently, its sensibility. Associated with a powerful emotion, these effects are more strikingly shown. And, when not directed to any special part, an excited emotional condition induces a general sensitiveness to impressions—an intolerance of noise, for example, or cutaneous irritation.
2. Thought strongly directed away from any part, especially when this is occasioned by emotion, lessens its sensibility. The activity of the cerebral functions during deep intellectual operations, excludes consciousness of impressions made upon the sensory nerves generally, and an absorbing emotion effectually produces the same result.
3. The emotions may cause sensations, either by directly exciting the sensory ganglia and the central extremities of the nerves of sensation, or by inducing vascular changes in a certain part of the body, which changes excite the sensitive nerves at their peripheral terminations.
4. There is no sensation, whether general or special, excited by agents acting upon the body from without, which cannot be excited also from within by cerebral changes (including those associated with emotional excitement) affecting the sensory ganglia.

ART. 44.—*Treatment and Symptoms of Tic-douloureux.*

By Prof. BENEDIKT, of Vienna.

(Oesterreichische Zeitschrift für practische Heilkunde, 10, 1871; Schmidt's Jahrbücher, No. 5, 1871.)

"The author wishes to make for neuralgia, in general, a distinction between those cases in which the paroxysm of pain has a continuous course, and varies only in intensity, and those which clearly consist of short attacks. The latter character is especially that of the eccentric neuralgia, and depends upon a reflex irritation of the vasa nervorum.

"In neuralgia of the trigeminal nerve, these two forms of neuralgia must be sharply divided; to the first forms should be given the name of neuralgia of the trigeminal nerve, to the second alone the name of tic-douloureux.

"Tic-douloureux is generally associated with increase of temperature, œdematous swelling and tension of the facial muscles, and sometimes enlargement of the carotid artery on the affected side. In some cases, on the other hand, there is cyanosis of the face and contraction of the carotid.

"Among remedial means, galvanism stands in the first place—applied partly along and across the head, and partly to the sympathetic nerve.

"In recent cases one or two sittings suffice for cure; severe cases of long standing require about fourteen days, relapses a shorter time. With very severe cases, galvanization does the most good at the first attack, relapses it does not much relieve. Here is the opportunity for an operative attempt. In a small number of cases under the author, the affection was not influenced by the galvanic treatment.

"The author restricts the use of subcutaneous injection of morphia to incurable cases of neuralgia. In cases of dilated carotid he has seen the practice of digital compression followed by good results."

ART. 45.—*A Case of Transitory Aphasia Dependent on the Attacks of Intermittent Fever.*

By Prof. E. BOISSEAU, Val-de-Grâce.

(Gazette Hebdomadaire, No. 12, 1871.)

"M—, aged twenty-seven years, was admitted into the Val-de-Grâce, on April 3d, 1871. This man, who was very weak and anæmic, then suffered from a palustral fever, which he had contracted at Cochín-China in 1866, and of which there had been numerous relapses. A refugee to Belgium after the battle of Sedan, he was admitted into the hospital at Anvers, in order to be treated for an accession of intermittent fever, which came on every third or fourth day.

"The patient had had an attack two days before his admission into the Val-de-Grâce hospital, and I then concluded that it would be repeated on the next day, or on the day after, at the latest. On the 4th of April I found him on my visit in the last stage of an attack, and sweating freely. Sulphate of quinine was ordered.

"On the following morning I found the patient at the end of another attack, which had commenced about two o'clock in the morning. The look of the patient was disturbed and startled. On my addressing him, he made me understand, by a very expressive gesture, that he could not reply, and indicated by his hand that he was suffering from headache. On being asked to drink, he took up the glass without hesitation; he comprehended and performed anything that he was told to do; in short, the intelligence was intact, but there was complete loss of speech. No paralysis, either of the face or of any limbs, and neither sensation or mobility had undergone the least change. Eight decigrammes of sulphate of quinine were immediately administered.

"About a quarter of an hour later the patient was able to pronounce a few words; he replied *oui* and *non* to questions which were put to him, and, when asked where he suffered pain, stated that it was in the temples, indicating at the same time those regions with his hand. At the end of an hour the power of speech had completely returned; he then complained much of lassitude in the limbs, and of heaviness in the head; there was still abundant perspiration.

"In the evening I revisited the patient: he had slept well since his attack, and the perspiration had ceased; he was then able to be questioned more at length. He stated that during the previous night, and before the commencement of the rigors, he had been seized with intense cephalalgia; soon afterwards he noticed that his tongue was embarrassed, and shortly felt unable to pronounce a single word, *at the same time retaining his intelligence and being perfectly conscious of his situation*. At six in the morning he was able to pronounce a few words, but the complete aphasia soon returned again, to disappear altogether at nine o'clock. It had lasted then for about seven hours—from two to nine, if no count be taken of the short remission which took place at six.

"This was not the first occasion on which the patient had been thus affected during an attack of intermittent fever. Both in Cochinchina and at Anvers there occurred, during an accession of the fever, a transitory attack of aphasia, with complete conservation of intelligence."

ART. 46.—*On Delirium in Variola.*

By Dr. LABORDE.

(*Gazette Hebdomadaire*, No. 35, 1871.)

"The delirium usually accompanying the first and often the second stage of the variolous eruption manifested itself with exceptional intensity in almost all the severe cases of variola observed at the Beaujon hospital during the siege of Paris. In some of these cases the delirious manifestations were so marked from the commencement of the disease that it would have been easy to have mistaken it for primary meningitis if the more or less tardy appearance of the vesico-papules had not removed the doubt. This delay in the manifestation of the eruption, joined sometimes to its discrete form, which is sometimes extreme, may, as we can imagine, give rise to temporary diagnostic difficulties.

"I have sometimes noticed the delirium affect the form of continuous *loquacious subdelirium*, and this in cases of excessively grave and abnormal variola, where an almost sudden arrest operates in the evolution of pustules, and where one sees these completely effaced by the accompanying œdema, especially on the hands and lower extremities; in these cases the delirium is almost always allied with ataxo-adyynamic phenomena which give to this collection of symptoms the characters of a most severe typhoid condition.

"In other cases the delirium presented the characters of an accession of acute mania; here, there was no doubt that visual and auditory hallucinations presided over the delirious impulses of the patients, whom it was necessary to restrain by appropriate confining means.

"*Alcoholism*, it is important to remark, plays a great part in these delirious manifestations, and impresses upon them, so to speak, its symptomatic seal, at the same time exercising a real influence upon the progress and gravity of the disease. We need not repeat here the special characters of alcoholic delirium, which cannot escape an attentive observer when this delirium is produced in an isolated form, and, in some way, in its proper individuality; but it is not always revealed with this distinctness when it occurs during the course and under the influence of an intercurrent affection. In variola there are two special circumstances which enable us to recognize the intervention of alcoholism, these are: the *precocious* manifestation of delirium from the commencement of the invasion period of variola; and, secondly, the *persistence* of this same delirium during nearly the whole course of the disease, most frequently with increased

intensity and aggravation; add to these the special characters of alcoholic delirium—hallucinations of vision, more or less generalized, muscular tremor, irresistible impulse to self-precipitation through the nearest outlet—and you will have the collection of symptomatic modifications added to the disease through the intervention and influence of the persistent *alcoholic condition*. This influence, in the numerous cases which I had opportunities for seeing, was almost always serious, and often fatal, not only on account of the bad symptoms manifested by the nervous system, but also by the secondary morbid determinations which come so frequently in the respiratory organs.

"In those unfortunately very numerous cases in which there is a complication of facial erysipelas, delirium forms one of the symptoms. Under these circumstances it has shown itself with exceptional intensity during the recent epidemic. In some instances there was an actual accession of very acute mania.

"The relation which exists, under these conditions, between the manifestations of delirium and meningitis by propagation is a fact which has for some time been confirmed by the positive results of cadaveric investigations. But with regard to this matter there is one distinction which, it seems to me, has not been sufficiently established—this is that if meningitic changes which have taken place secondarily may prove the anatomical cause of delirious symptoms, at a certain period of variola, the period of confirmed eruption, there may be the same cause for the delirium which breaks out suddenly at the commencement of the exanthematic affection. In this case we must admit the purely functional character of the delirious manifestations, and in this, moreover, there is nothing contradictory to the number of facts belonging to mental pathology. It is especially in these circumstances that the alcoholic predisposition is revealed in subjects affected with variola.

"Though the congestion and inflammatory conditions of the meninges may have been sufficiently indicated as a frequent anatomical cause of delirium in variola, the same cannot occur in another anatomical change which I have often observed in my autopsies—this is *phlebitis* of most of the subcutaneous venous trunks of the frontal and orbital regions. The *temporal vein* seems to have been the usual seat of this affection; once I made out in this vessel a veritable suppurative phlebitis. The ophthalmic veins also are often implicated in the same way, and, consecutively, the intra-cranial venous sinuses, which have almost exclusively fixed the attention of observers. It is easy to understand the part that these vascular lesions would take in the determination of several consecutive lesions, which thus complicate variola and contribute to the fatality of its termination. In fact, it is constantly in *fatal cases* that these lesions have been produced and observed."

(B) CONCERNING THE RESPIRATORY SYSTEM.

ART. 47.—*Treatment of Pertussis.*

By JOHN J. CALDWELL, M.D.

(*Boston Medical and Surgical Journal*.)

Dr. Caldwell, of Brooklyn, contributes the description of a method of treating whooping-cough by the application of atomized fluids to the air-passages, in accordance with the theory of Niemeyer, that the disease is a catarrh of the respiratory mucous membrane, attended with intense hyperæsthesia. The result of this treatment, in his own practice, has been that the whooping inspirations have ceased within a week, and the catarrhal inflammation has rapidly subsided.

He recommends the following mixture:—

R. Ext. belladonnæ fl., gtt. v ad x.
Potassæ bromidi, ℥j.
Ammoniæ bromidi, ℥ij.
Aquæ destill., ℥ij.

M. Ft. solutio.

Of this about a tablespoonful is to be applied once daily.

ART. 48.—*Treatment of Pertussis.*

By W. F. McNUTT, M.D.

(Boston Medical and Surgical Journal, August 16.)

Dr. McNutt mentions that his own experience, as well as that of Dr. R. T. Maxwell, his partner, is that most cases of whooping-cough can be cured by local treatment, and that one need only try the treatment to be convinced of the fact. Drs. McNutt and Maxwell have always used a solution of nitrate of silver, gr. xv. to the ounce, applied by the spray atomizer; this has been found to be a satisfactory formula.

There is no doubt in the mind of Dr. McNutt that local appliances are all that is necessary for treatment and cure of whooping-cough. And there is very little doubt that there is a variety of substances that can be used for the purpose. The solution of nitrate of silver, however, will seldom fail to effect a cure.

ART. 49.—*Bromide of Potassium in Croup.*

By S. B. KIEFFER, M.D.

(Chicago Medical Journal; and The Medical Record, August 15.)

Dr. Kieffer cannot, after experiments from good authority, regard the bromide of potassium as a *solvent*, so to speak, of false membrane; but he does believe, and on this principle he has prescribed it, that just in proportion as it is a *sedative* to the cerebro-spinal system directly, so it is a stimulant, indirectly, to the nerve-filaments and circulation of the throat; and as the inflammation in membranous croup is usually, if not always, of the asthenic character, it has the power, by its specific action, of equalizing the circulation and arresting the fibro-albuminous deposit. And when the disease is not too severe, or has not progressed far, the system thus, by its own inherent power, will be equal to the task of repairing the evil. His combination is about as follows for an infant: R. Bromide of potassium, gr. xx; chlorate of potassa, gr. x; ipecac, gr. j; ext. of liquorice, ʒss; water, ℥ijss. M. S., a teaspoonful every hour.

ART. 50.—*On the Treatment of Diphtheria by Carbolic Acid.*

By F. C. HOTZ, of Chicago.

(The Medical Record, August 15.)

Dr. Hotz wishes to draw the attention of the profession anew to this remedy, by reporting a number of cases of diphtheria which, during the last winter, he treated with the most gratifying success with carbolic acid. He used for this topical medication the acid in the following form: R. Acid. carbolic. cryst., alcohol, āā ʒj; aquæ, ʒv; tinct. iodin., ʒss. M. This makes a perfectly clear, transparent mixture, of a brown-red color, which soon, however, passes over into a pale yellow. The combination with iodine and alcohol effectually moderates the very unpleasant smell of the carbolic acid, and increases its antiseptic effect. This solution was applied to the diphtheritic exudation three or four times in twenty-four hours, by means of a camel-hair brush. In adults and older children it was in a diluted form (fifteen to thirty drops to a cup of water) used also as a frequent gargle, and for injections into the nostrils if the nose was implicated.

ART. 51.—*On the Treatment of Pleuritic Effusion.*

By HENRY W. FULLER, M.D., F.R.C.P., Senior Physician to St. George's Hospital.

(*St. George's Hospital Reports*, vol. v. 1870.)

Dr. Fuller calls attention to the treatment of pleuritic effusion when, either from the urgency of the dyspnoea which it occasions, or from our apparent failure to produce absorption of the fluid through the agency of medicine, some other and more speedy method of affording relief is obviously desirable. Dr. Fuller's advice, founded on large bedside experience, may be summarized thus: 1st, tap whenever dyspnoea is very urgent, or as soon as it becomes evident that remedies fail to produce absorption of the fluid in the chest; 2d, tap as low down as possible, and make a free opening, allowing the chest to empty itself thoroughly; 3d, so far as possible avoid causing any local irritation; 4th, if the fluid withdrawn is serous, or sero-sanguineous, close the opening with carbolic plaster as soon as the operation is concluded; if, on the contrary, the fluid is purulent, adopt some means to prevent the wound from closing, and take care that the matter is allowed to drain off as fast as it is formed; 5th, after the operation, support the patient by bark and good nourishment, and for a day or two give him opium if necessary.

ART. 52.—*On the Treatment of Peritoneal and Gastro-Intestinal Pneumatosis by Puncture.*¹

By Professor FOUSSAGRIVES, of Montpellier.

(*Gazette Hebdomadaire*, No. 24, 1871.)

In a short historical review of this operation, M. Foussagrives mentions that it had been performed in France by Récamier, Nélaton, Blache, and Velpeau; that it constitutes a proceeding of current practice in certain countries, especially in Bolivia, where gastric pneumatosis is pretty common; and, finally, that it is applied in veterinary surgery.

M. Foussagrives insists upon the indications for puncture in cases of asphyxic pneumatosis, and he relates some cases which prove the prompt efficacy and the perfect harmlessness of this proceeding.

The first case observed in 1868 was one of a medical man of Toulonae, who was attacked in the course of a suppurative cystitis by gastro-intestinal pneumatosis. The upward displacement of the diaphragm and the distension of the abdominal walls by tympanitis rendered asphyxia imminent. The first puncture was followed by immediate relief. Two fresh punctures were made on the following day and on the day after, and the pneumatosis disappeared.

In the same city, in a patient affected with simple remittent fever, an asphyxic pneumatosis was cured by three successive punctures made with a hydrocele trocar. No bad symptom resulted; nor any complication.

The third case relates to an old man, seventy-two years of age, who had been affected for some time with obstinate constipation, for which he was in the habit of taking cathartic pills. One day these pills, instead of producing an alvine evacuation, caused an extraordinary disengagement of intestinal gas. Evacuants, absorbents, and catheterism of the rectum by means of an œsophageal sound did no service. As the bad results of this were increasing in intensity, and asphyxia was imminent, M. Foussagrives performed puncture of the colon in the epigastric region with an exploratory trocar. The canula immediately gave exit to a hissing stream of gas of characteristic odor, and accompanied by stercoraceous material. This operation gave immediate relief, and there was no necessity for its repetition.

¹ Communicated to the Académie de Médecine.

This case M. Foussagrives thinks is a decisive argument in favor of puncture as a curative measure in cases of gastric and intestinal pneumatosis. Although this operation may be an inoffensive one, and never gives rise to any symptom of peritonitis, M. Foussagrives is of opinion that its practice ought not to be abused, and that it should only be carried out after the use of ordinary means as a kind of ultimate resource in the asphyxial period of pneumatosis. In cases similar to the one just mentioned the indication for its employment is not doubtful. "It is," according to M. Foussagrives, "a sovereign operation, and one which alone may preserve the life of a patient menaced with speedy death."

The operation ought to be practised with an exploratory trocar; it is useless, and might be dangerous, to allow the canula to remain. If the pneumatosis should return, the puncture may be repeated as often as is necessary. Multiple puncture presents no more inconveniences or danger than simple puncture. In one case the patient was punctured fifty times without the occurrence of the slightest bad symptom.

In conclusion, M. Foussagrives briefly indicates the useful part which puncture may play in the treatment of strangulated hernia as a means of reduction, either before or after kelotomy, and especially in combining with the proceeding that of aspiration.

ART. 53.—*Two Cases of Pneumothorax treated by Aspiration at the London Hospital.*

Under the care of Dr. RAMSKILL.

(*The Lancet*, August 19.)

The following two cases are of interest as showing the great value of the pneumatic aspirator in the treatment of pneumothorax. In the first case the patient was immediately rescued by the operation from a condition of great suffering and danger, and placed in ease and safety, from which there was no relapse. In the second, from the nature of the disease causing the pneumothorax, cure was impossible, but the distressing dyspnoea was removed, and the passage from life made easy.

There appears to be no drawback to the operation, which in itself is exceedingly trivial and painless. Its good effects are immediate. There was recently in the hospital, under Dr. Ramskill's care, a case of hydro-pneumothorax of some standing. This was treated by puncture with an ordinary trocar and canula, and a drainage-tube was left in. Unfortunately, the operation was followed by extravasation of air into the cellular tissue around the wound, and, ultimately, into the whole subcutaneous cellular tissue, causing the death of the patient. In the first of the following cases there was at the time of the operation slight extravasation of air into the cellular tissue around the wound, which is attributed to an accident in the operation. Owing to the puncture being so small, the orifice closed in the course of an hour or two, and no further escape took place. What little air there was in the cellular tissue was absorbed in the course of the next day. In the second case there was no surgical emphysema whatever. The only precautions necessary in the operation are: first, to pass the needle in horizontally in the centre of the intercostal space so as to avoid the ribs, for the cases in which surgical emphysema has followed have been those in which the needle has glanced off the rib into the cellular tissue; and, secondly, only to pass the needle sufficiently far to reach the air in the pleural cavity, for if the needle project far into the pleural cavity, when the lung expands the visceral layer of the pleura comes in contact with it, and considerable pain is caused. The first case, from its interest, is detailed at some length.

Pneumothorax, probably from Rupture of an Emphysematous Air-vesicle; aspiration; recovery.—Henry W., aged fifty, had been subject for many years to cough and shortness of breath, both of which had become worse year by year. On the morning of admission he felt as well as usual, except for a slight pain in the right side of his chest. In the middle of the day he went out of doors on business, and whilst walking in the street felt all at once that he could

not get a breath, had great pain in the chest, and staggered so that he had to be supported. This took place just outside the hospital, and he was immediately carried in. The messenger who fetched Mr. Mackenzie said that the man was so ill that it was doubtful whether he would be alive when he reached him. He was found livid and gasping for breath, but as the dyspnoea was said to be slightly less than it had been a few minutes previously, some hot brandy-and-water was given him, and he was ordered to remain in the receiving-room for half an hour, and then be carried into a ward. When seen later in the day he was suffering from extreme dyspnoea, and sat with his arms and shoulders raised, but was not so livid as when first seen. The nurse said his breathing had been even worse than it then was, and she had thought that he was going to die. When his shirt was taken off it was found that the breathing was exceedingly labored, and that there was great recession of the intercostal spaces and epigastrium at each inspiration. On percussing the right front of chest, the resonance was found to be tympanitic from the second rib to the lower margin posteriorly; it was tympanitic from the root of the lung downwards. The respiration was amphoric over the tympanitic portion, and accompanied by metallic tinkling. The liver was pushed down entirely below the ribs. The left lung was highly emphysematous, and respiration was accompanied by sibilant and sonorous râles. The heart was beating with great rapidity.

It was concluded from the history and physical signs that the pneumothorax was in all probability the result of the rupture of an emphysematous air-vesicle, and it was at once decided to remove the air from the pleural cavity by the pneumatic aspirator. The smallest needle of the instrument was employed, and this was introduced at the ninth intercostal space, close to the angles of the ribs. At the first attempt the needle glanced off one of the ribs, and appeared beneath the skin. At the second attempt it entered the pleural cavity, and air rushed into the body of the syringe. The air was pumped out until no more would come, and it was then found that between sixty and seventy ounces, by measure, had been evacuated. On listening now to the chest it was found that there was no longer any amphoric breathing, and by percussing it was found that the liver had ascended slightly into the thorax. A little air was perceived in the cellular tissue, around the seat of puncture, but this excited no alarm, and no compress or other application was placed over the spot. The patient experienced the greatest relief from the moment that one or two syringefuls of air were drawn off, and at the end of the operation was able to take a full breath, and to lie down with ease. There was no pain or other discomfort. Half a grain of morphia was administered, and the patient was directed to lie on his right side, and resist all inclination to cough.

On the following morning it was found that he had slept all through the night; he was in no pain, and his breathing was quite comfortable. There was less air in the cellular tissue of the back than on the previous evening, and there was no elevation of temperature. The air in the cellular tissue of the back had disappeared by the evening. For the next week he was kept lying as far as possible on his right side, and took a third of a grain of morphia three times a day to prevent coughing. There was no reaccumulation of air whatever in the pleural cavity. At the end of a week he got up. He was troubled with some bronchitis and emphysema of both lungs, which were habitual to him, and which were much relieved by appropriate treatment. He left the hospital for the country three weeks from the time of his admission, feeling better than he had been for months.

Pneumothorax in a phthisical patient; aspiration; great relief.—Ellen S., aged twenty-eight, was admitted with very acute broncho-pneumonic phthisis. On the evening of admission her pulse was 150, respiration 44, temperature 105°. Her breathing was very difficult from the first, but after she had been in the hospital about ten days it was found that she could only rest with her body bent double, her chest resting on a pillow placed in front of her. She could lie in no other position. This attracted attention, and on examination it was discovered that there was a large quantity of air in the left pleural cavity. The smallest needle of the aspirator was introduced between two of the lower ribs posteriorly, and seventy-four ounces (by measure) of air were drawn off.

The relief was instantaneous, and she was at once able to lie in the recumbent position. She died a week later. There was slight reaccumulation of air in the pleural cavity a day or so before her death, but it was not sufficient to cause any great distress.

ART. 54.—*Diaphragmatic Pleuritis.*

By THOMAS HAYDEN, M.D.

(*Dublin Quarterly Journal of the Medical Sciences*, August.)

Dr. Hayden has reported and collected several cases of this comparatively rare affection. From the cases he has witnessed, he draws the following conclusions: Diaphragmatic pleuritis is characterized by—1. Sudden and severe pain in either hypochondrium, extending in the line of the costal cartilages, generally likewise down the corresponding side of the abdomen, occasionally upwards to the tip of the shoulder, and aggravated by movement of body, full breathing, cough, and vomiting. 2. Shallow and thoracic breathing, dorsal decubitus, and comparative freedom from pain in the state of rest. 3. Absence of febrile action in mild cases uncomplicated by general pleuritis, pneumonia, peri-hepatitis, or other form of acute inflammation; and in severe cases, whether complicated or not, symptoms of collapse. 4. Partial or complete suspension of respiratory sound in the base of the lung on the affected side, and faint frottement, or rustling sound, audible with respiration. 5. Inability to swallow; nausea and vomiting of occasional but rare occurrence, and confined to the most aggravated cases. 6. Displacement of the diaphragm upwards in recent cases, unattended with suppurative inflammation; but downwards where the antecedent inflammation has proceeded to the formation of pus. 7. Resistance of the symptoms to active treatment, and yielding to dry cupping, the local use of belladonna, and opium internally. Where upward displacement of the diaphragm exists, it may be concluded that suppuration has not taken place, that the muscular structure of the diaphragm has not been implicated in the inflammation or paralyzed, and that, *pro tanto*, the case is one of favorable augury. Dr. Hayden has not witnessed examples of inability to rest, save in the sitting and stooping posture, risus sardonius, or delirium, and is disposed to regard these alleged symptoms of phrenic pleurisy as of equivocal value, and strictly accidental.

ART. 55.—*Quinine in Pneumonia.*

By A. J. TERRELL, M.D.

(*The Medical Record*, July 1.)

Dr. Terrell, of Henrico County, Virginia, is in the habit of treating pneumonia with large doses of quinine, and says that he has seen as much benefit (in a curative way) from this plan of treatment as from any medicine in any disease. It shortens the attack, and the earlier it is resorted to the better. He regards quinine as a great equalizer of the circulation, and, acting upon the nerves which control the circulation, it is necessarily anti-congestive. Some physicians, he remarks, admit its beneficial effects in typhoid pneumonia, or when there is a remittent tendency, or malarial complication in any form; but he makes no discrimination, giving it in *all* cases, in large doses, for its sedative and anti-congestive powers. For the diarrhoea which sometimes supervenes in the progress of an attack of pneumonia, he has found nothing better than a few grains of tannin, in combination with the quinine, for arresting it.

ART. 56.—*On Tubercular Pneumonia.*

By D. FRANCIS CONDIE, M.D.

(American Journal of the Medical Sciences.)

Dr. Condie, of Philadelphia, believes that the term "tubercular pneumonia" is adapted to the following class of cases: When a patient, affected with tuberculosis, is, from exposure to cold or damp, or to sudden transitions of atmospheric temperature, or from deficient clothing, attacked with bronchitis or pneumonia, the course of the disease towards a fatal termination is very rapid, as well on account of the crippled condition of the tuberculated lung, rendering it incapable of sustaining the inflammatory process set up in its tissues, until a favorable close occurs, as from the depressed vitality of the entire system, which is invariably attendant upon tuberculosis, precluding a resort to the therapeutic means adapted to arrest the inflammation of the lung tissues previously to their entire disorganization. The profession almost universally recognize the convenience of the term tubercular meningitis, tubercular peritonitis, &c.; why not also, then, tubercular pneumonia? indicating, respectively, inflammation seated in the tuberculosed meninges of the brain, in a tuberculosed peritoneum, in tubercular lungs, &c.

ART. 57.—*Consumption: Is it Contagious?*

By LAWSON TAIT, F.R.C.S. Eng., F.R.C.S. and L.R.C.P. Edin., &c.; Surgeon to the Birmingham and Midland Hospital for Women.

(American Journal of the Medical Sciences, October.)

Mr. Tait entertains the belief strongly that pulmonary consumption may be communicated by prolonged contact, especially as in sleeping, between the healthy and diseased. The following case mainly contributed to the formation of his opinion:—

"About three years ago there came one day to consult me a pretty, flaxen-haired, blue-eyed girl of about eighteen, whose face alone it was enough to look at to designate pulmonary consumption. She told me her mother had died of it, and so had one brother. As is the wont of women in affliction, she brought a friend with her to help her through the ordeal of the visit, a perfect contrast to herself, tall, stout, and strong, the very picture of health, a handsome Irish brunette, born near Sligo. The two worked together at one of our Yorkshire wool-mills; and it would seem as if the strong contrast there was between them had caused their close friendship. They lodged together, and until their visit to me had slept together. As is my custom, I at once insisted on the patient having a room to herself, and after my injunction this was strictly carried out. I need not detail the case of the first girl. Suffice it to say that she passed through several attacks of softening, during each of which she was attended carefully but not closely by her friend, who, during the time when the patient was unable to work, earned the support of both, and after those attacks she recovered completely, married, and is now the mother of two children. Her devoted friend had a different and sadder fate; for, only five weeks after her first visit to me in the capacity of companion to my patient, she herself came with the dyspeptic symptoms which usher in the first stage of phthisis. During the time she was nursing her friend, the physical signs of incipient consumption were manifested, and, despite all my endeavors, it ran an almost unchecked course in rather less than three months. Long before her death, the conditions of the two girls were reversed: the patient had become the nurse, and the nurse had taken the patient's bed; the former, whose fate I had regarded as decided, recovered; the latter, who really sacrificed herself for her friend, died. It was strange and most interesting to me to find that the survivor felt keenly that she had given the disease to her companion, and was the unconscious cause of her death. In the case of the girl who died, I was fortunately able to get a family

history very completely, and to eliminate any difficulty there might have remained as to a family taint. Her father and mother, and several brothers and sisters, were alive and all strong. She had a grandfather and two grandmothers alive, and no instance had occurred in the family of death from chest disease or any of the usually allied affections. Nor in her own history was there any point which could be indicated as one of likely explanation for the phthisis. The whole evidence, negative certainly, but none the less valuable on that account, pointed to the conclusion that it was a case of phthisis derived from contagion."

ART. 58.—On Latent Phthisis.

By M. N. GUENEAU DE MUSSY.

(*Gazette de Hebdomadaire*, No. 19, 1871.)

M. G. de Mussy reports a case of latent phthisis in a man aged seventy-one years, and concludes his contribution with the following remarks:—

"Here we have a patient, both of whose lungs were studded throughout with tubercles, who had never had cough, fever, or expectoration, and, what is still more surprising, in whom auscultation had never revealed the existence of such serious and extensive morbid changes.

"How is this apparent contradiction between the lesions and the symptoms to be explained? How can a morbid process of this kind be developed without exciting any marked functional disturbance in the invaded organs? The only symptomatic manifestations which could direct attention to the state of the thoracic organs were pleuralgia and dyspnoea; but the dyspnoea was very slight, and could be accounted for by paralysis of the diaphragm. As to the pleuralgia, it had been intense at first, but afterwards became very moderate, intermittent, and appreciable only during the movements of the body.

"Immobility of the diaphragm had probably been caused by the thick and close adhesions which united the superior surface of the muscle to the concave surfaces of the lungs, which themselves were adherent by almost the whole of their surfaces to the wall of the thorax. In consequence of this, the muscular tissue of the diaphragm might have undergone consecutive changes. But how could a pleurisy so extensive as to leave behind it such considerable new-growths be allowed to pass by unperceived? Is it necessary to question the memory and the veracity of the patient? The manner in which the other symptoms were evolved removes this suspicion. In this patient, evidently, that faculty of reaction which causes the organs to revolt against the morbid stimuli which attack them, and to involve the whole organism in a reactional consensus, was almost entirely annihilated. In all probability the commencement of the pleuralgia corresponded to the origin of the pleurisy which had excited neither cough nor fever. It appears that the excitability of the ganglionic nervous system, the property called by Bichat the organic sensibility, was extinguished in the thoracic organs. The lungs did not feel the morbid stimulus which had excited in the pleura an inflammatory process, any more than it had felt the thousands of tubercles which were present in its parenchyma. It is not a rare event in the last stage of the pneumonia of old people, to observe the oppression of breathing disappear, the pulse and the respiration to become slower, the cough to cease, and death to take place whilst inexperienced attendants are hoping for better things as a result of this relief of the functional disturbances. In this case, evidently, the lungs did not feel the morbid action; they did not feel the want of reacting by cough against the mucosities by which the air-passages were obstructed, and of supplementing by increased movements the diminution of the respiratory surfaces.

"In this patient the circulatory apparatus also did not react, but remained indifferent to the severe pulmonic lesions. That solidarity which associates it with severe affections of the organism was broken; it did not sympathize with the pleura and lungs, attacked the one with an acute, the other with a chronic

affection; and it did not, as usually occurs in conditions of this kind, manifest this sympathy by inflammatory or hectic fever.

"This indifference was not only presented by the centre of circulation and the large arteries, but also by the capillaries. Around the tubercles and a large mass which occupied the left lung, neither chronic inflammation nor even congestion was found. In the intervals between the morbid deposits the pulmonary sacs remained healthy and permeable. In the encephalon, except over a patch of congestion at the base of the left frontal lobe around an agglomeration of tubercle, a congestion which probably explains an attack of aphasia and right-sided hemiplegia just before death, the meninges could be readily detached from the periphery of the brain without bringing away the smallest particle of cerebral substance. There was, then, no inflammation of the pia mater. The only sign of any circulatory disturbance was some serous effusion, but this might have been mechanical. Might the encephalic lesions, the evolution of which had certainly long preceded the external manifestations, have had something to do with the form of paralysis of the ganglionic system which had extinguished the excitability of the elementary cells in the vicinity of the lesions? Is it not strange to see very numerous meningeal tubercles, the presence of which was revealed only a few hours before death by aphasia and hemiplegia? The symptomatic expression of this meningeal tubercularization is as anomalous and incomplete as that of the pulmonic tubercularization. The principal morbid phenomena in this case were anorexia and emaciation: of these marked disturbances of nutrition it is always necessary to be suspicious, where no organic explanation of them can be found. Occasionally, as was remarked by M. Andral, obstinate chlorosis, and especially when it is accompanied by obstinate anorexia and progressive emaciation, may mark the commencement of phthisis.

"The absence of the characteristic physical signs seem to me to have been due to the organic conditions just described. A great number of the signs of pulmonary tubercularization, when the tubercles are not infiltrated or collected into large masses or softened, are due to changes of the respiratory parenchyma around the tubercles. It is not astonishing, then, that when these morbid changes were absent, the symptoms were in default. When tubercles are deposited in a mass of permeable tissue, when they are not sufficiently numerous to compress the bronchial ramifications, when they are not surrounded by those congestions and inflammatory infarctions which give rise to râles and souffles, their physical symptomatology is very restricted. Clearness on percussion in the subclavicular region might give rise to doubt, but this sign may be dependent upon other morbid conditions, as, for example, emphysema. With regard to feebleness of the respiratory kind on the right side in this case, I think that this was especially due to immobility of the diaphragm on that side. The thick false membranes enveloping the lung would also contribute to this.

"Intestinal ulcerations seem to me to have explained the earthy tint of the surface observed in this case. This cutaneous pigmentation was described by me some time since as a coincident of abdominal tubercularization."

(C) CONCERNING THE CIRCULATORY SYSTEM.

ART. 59.—On Idiopathic Pericarditis.

By Dr. BÆUMLER.

(*British Medical Journal*, October 21.)

At a meeting of the Clinical Society of London, on October 13th, Dr. Bæumler read a paper on "Partial and General Idiopathic Pericarditis," in which he endeavored to prove that the white or milky spot on the surface of the heart frequently met with at post-mortem examinations has a clinical history of very transient acute pericarditis. He adduced in support of this proposition two cases, in which an acute illness, coming on with dyspnoea, with pain behind

the sternum, radiating upwards to the larynx, the left shoulder, and towards the left ear, and with slight febrile disturbance, was accompanied by a characteristic pericardial friction-sound, lasting, like the other symptoms, only for two or three days. In a third case, where the onset had been more gradual, the friction-sound was heard over a larger area; and there was also some distension of the pericardium by fluid; yet the whole attack was mild and lasted only a fortnight. Such intermediate forms link the very slight cases to the more serious ones which more generally come under observation. Cases of idiopathic pericarditis being of rare occurrence, Dr. Bäumler appended the history of three other cases of this kind which had come under his observation. The three patients were little girls from eight to ten years of age, and the pericarditis had come on in so insidious a manner that they had walked about with the pericardium full of effusion. One of them died; the two others recovered—one entirely, the other with valvular disease remaining. With regard to treatment, Dr. Bäumler particularly recommended the application of ice to the cardiac region, especially for its influence in reducing the number of the heart's contractions and in relieving pain.

The President (Dr. Gull), in suggesting some points in the paper for discussion, alluded to the doubts which had been expressed by some of the greatest observers, as to whether pericarditis *per se* caused pain, and this opened up the question whether the cases before the meeting were instances of pericarditis. Amongst the fallacies of the stethoscope is that of the to-and-fro murmur. It would be interesting again, he continued, to discuss what are the idiopathic conditions which set up pericarditis.

Dr. Bäumler, in answer to Dr. Douglas Powell, said he employed mustard and linseed-meal empirically to relieve pain, and ice to reduce the rapid action of the heart, and as an antiphlogistic.

Dr. Powell alluded to friction murmurs coming on in acute fevers and going off in a few hours, the occurrence of which, he supposed, might be due to the dryness of the pericardium.

ART. 60.—*Spontaneous Rupture of the Heart.*

By Dr. BARTL.

(*Archives Générales de Médecine*, Février, Mars; and *British and Foreign Medico-Chir. Review*, October.)

In an elaborate memoir, Dr. Bartl examines twenty-four cases of rupture of the heart, recorded in the *Bulletin de la Société Anatomique*. Of the twenty-four cases seven were those of males and seventeen of females. This unusual predominance of the female sex, however, is shown to have depended partly on an accidental circumstance. The age of only two females was less than sixty; one of the exceptions was fifty-eight, the other fifty-two. Of the remaining twenty-two, seventeen (six men, eleven women) were between seventy and seventy-nine years; one man was eighty-one, one woman sixty, another sixty-seven, and there were two aged females from the Salpêtrière whose exact age was unknown. Seven of the subjects were stout, and only two were noted as thin. In two cases habits of drinking were recorded. In twelve subjects the state of health previous to the rupture was recorded. Three were in good health, the others suffered from oppression, palpitations, vertigo, occasional loss of consciousness, &c. Amongst the exciting causes were—mental anxiety in one case; a large meal (two cases); coffee taken with brandy (one); the effort to rise in bed (two). Several of the patients suffered from constipation, and in five death occurred during efforts at defecation. In the great majority of cases death was sudden; some of the patients fell as if struck by lightning; more rarely life was prolonged for some minutes. In two cases only did life continue for half an hour; in one of these the patient lived an hour and a half after consciousness was lost. The suddenness of death favors the supposition that the rupture takes place *d'un seul coup*, but on examination of the cases it appears that in several of them, at least, the rent was made at different

times—that is to say, by successive division of the muscular layers forming the wall of the ventricle, and death took place on the rupture becoming complete. In all the cases the pericardium contained blood, which, in fifteen cases, varied in amount from 200 to about 500 grammes. In one case the pericardium contained more than two litres of black semi-coagulated blood. The blood was more or less coagulated. In twenty cases the rent was single, both as to the exterior and interior of the heart. In one case there were two external linear rents, situated, the one in front of, the other behind, the left border, and but one opening in the cavity of the left ventricle. In another there were three external rents, of which two communicated before penetrating the cardiac cavity; the third extended into the cavity alone. In all the cases the rent was in the left ventricle. In five cases the rent was on the anterior surface of the heart, near to the right ventricle; in five it was on the anterior surface, towards the border of the left ventricle; in three on the border itself: in eight partly on the posterior surface, and partly on the border; in one on the middle of the posterior surface; in one at the apex of the left heart, the situation not precisely noted. In half the cases the rent was in the middle of the heart (longitudinally); in four cases it was near the base; in one-third it had taken place near the apex. In eighteen of the twenty-four cases the heart was loaded with an abnormal quantity of fat, forming a thick layer on the surface, or infiltrating the tissue, and under the microscope the cardiac tissue presented yellow granulo-fatty degeneration, with more or less marked effacement of the striation of the muscular fibres. In several of the cases the cardiac arteries were found ossified, their walls incrustated with calcareous matter, and their calibre diminished. Of the twenty-four cases there was not one in which there was an absence of all anatomical alteration. In one case only it is noted that the tissue of the heart was healthy, but in this the coronary arteries were ossified, and the arch of the aorta was considerably narrowed. The principal anatomical alterations were interstitial hemorrhages in the wall of the heart, and fatty infiltration of the muscular tissue. Other anatomico-pathological alterations observed in certain of the cases are described as alterations of color of the tissue—yellowish or grayish—partial thinning and alterations of consistence of the walls of the heart, partial friability and *ramollissement*. In one instance M. Durand Fardel attributed the rupture of the heart to inflammatory softening, and some of the cases show that rupture of the heart may be favored by the effects of antecedent inflammation, perforations, and erosions of the pericardium, opacities, thickening and erosions of the endocardium, and by ulceration. Of this last cause a remarkable instance is given in which the ulceration had destroyed the *columnæ carneæ*, and had extended as far as the external surface.

ART. 61.—*A Case of Contraction of the Pulmonary Artery.*¹

By C. PAUL, M.D.

(*Gazette Hebdomadaire*, No. 27, 1871.)

The subject of this report was a man aged thirty-six years, without any kind of morbid hereditary antecedents. In July, 1869, he was admitted into *la Charité* with hæmoptysis, and at this period he presented all the symptoms of advanced phthisis. He had, moreover, hypertrophy of the heart, quite appreciable on percussion, and presented a *bruit de souffle* at the base, the peculiar characters of which led Dr. Paul to diagnose contraction of the pulmonary artery.

This man about ten years before had suffered from acute articular rheumatism which lasted for three months, and was associated with endocarditis. Since this attack he had complained of palpitations and slight dyspnoea. In 1867 the first symptoms of phthisis made their appearance. The case then was one not of a congenital, but of an acquired affection of the heart; the integrity of the man's

¹ Communicated to the Société Médicale des Hôpitaux.

health before the attack of articular rheumatism and the disturbances of the circulation dating from this attack, left no doubt on this point, and this opinion was soon confirmed by pathological anatomy.

The following were the signs observed on the side of the circulation: the extent of cardiac dulness was much increased; the antero-inferior margin was lowered, and the apex moved to the outside of the nipple; the cardiac pulsations were energetically communicated to the walls of the chest. A very well marked *frémissement* could be felt by the hand; with the first sound could be heard a *bruit de souffle*, which was prolonged over the interval until the second sound. Its maximum was in the second intercostal space on the left side, about two or three centimetres to the outer side of the sternum. This abnormal bruit was propagated towards the sternum. It could not be traced along the aorta or over the carotids. The pulse was feeble and compressible; no abnormal character in the sphygmographic tracing. At the apices of both lungs could be made out the symptoms of caseous pneumonia in its third stage.

The cardiac affection recognized as hypertrophy with contraction of the pulmonary artery caused no reaction on the part of the peripheral circulation. The pulmonary disease followed its fatal course, accompanied from time to time by more or less abundant hæmoptysis. Death occurred without any other symptom.

Post-mortem examination showed at the apices of the lungs the different degrees of the lesions of caseous pneumonia, such as had been revealed by auscultation. The heart was large and symmetrical. The right ventricle had acquired a size, and its walls a thickness, equal to those of the left ventricle. The intra-ventricular septum projected into the left ventricle. The orifice of the pulmonary artery was contracted to such an extent that the extremity of the little finger could not be introduced. The valves were joined together, but their margins were still sufficiently free to descend and oppose the reflux of blood; in short, there was no incompetency. Above the valves the pulmonary artery was thin and not retracted. In the auricle the fossa ovalis and the ring of Vieussens were found regularly formed. At the anterior part of the fossa ovalis there was a small fissure through which a probe could be passed into the left auricle, but the conformation of the septum at this part prevented the passage of blood through this fissure at the time of the auricular contraction. Finally, the cardiac muscular tissue was in a state of granulo-fatty degeneration.

Dr. Paul makes the following remarks on this case:—

"It is evident that the contraction of the orifice of the pulmonary artery was not a congenital affection, for there was no arrest of development of this vessel, nor any anomaly in the conformation of the vestiges of the ductus arteriosus.

"It is known that the congenital affections of the heart arise in the first three months of foetal life and affect especially the pulmonary orifice; on the other hand, the lesions acquired during life are almost always found on the left side of the heart, except in old age, when the right side may be affected. An acquired morbid change in the pulmonary artery is therefore a rarity; but few cases have been reported. One of the best examples is to be found in Cruveilhier's *Atlas of Pathological Anatomy*. In six out of eleven reported instances, the seat of the lesion was at the level of the semilunar valves, which were joined together, thin and rigid, and formed a dome with an open concavity towards the ventricle. The contracted orifice is generally circular, and does not allow the passage of anything larger than a goose-quill. The calibre of the artery in these cases is not diminished. In four other instances the contraction was pre-arterial, that is to say, it affected the infundibulum: here it results from cicatrices due to myocarditis.

"In these eleven cases, together with the one now reported, the symptom of pulmonary contraction was a systolic bruit occupying the pause and continuing until the second sound: this was rough, and accompanied by a *frémissement*, which was manifested at the orifice of the artery. The maximum of the bruit was seated at a spot in the second intercostal space, about two centimetres from the sternum; it was propagated towards the clavicle, and began to diminish in intensity over the bifurcation of the artery, that is to say, about three

centimetres from its maximum seat. One sees how much this differs from the characteristic bruit of aortic contraction.

"Hypertrophy of the right side of the heart is the rule; the apex of the heart is not depressed, but the organ is turned on its axis, and its right edge becomes more and more horizontal. With regard to this point, it may be remarked that anatomists describe wrongly two surfaces and two edges of the heart: an antero-superior or sternal surface, and a postero-inferior or diaphragmatic surface; a right edge resting upon the centre of the diaphragm, and a left edge covered by the lung. It would be much more rational to admit three surfaces and three edges; an anterior surface, and inferior surface, and a posterior oblique surface; an antero-inferior edge, a postero-inferior edge, and an oblique superior edge.

"It has been stated by classical authors that one of the signs of pulmonary contraction is cyanosis. It did not, however, exist in the present case, and also in one reported by M. Charles Bernard. Cyanosis can only exist where there is a communication between the two sides of the heart, or when there is considerable venous stasis.

"This lesion of the pulmonary orifice does not bring with it all the disturbances of circulation which are observed in cases of lesion of the orifices of the left heart: one meets with less abdominal and pulmonary congestion, and less dropsy. There is, however, one important complication which has been observed in several of the reported cases; this is pulmonary phthisis. What is the relation of this complication to the cardiac lesion? Is the pulmonary contraction the cause of the phthisis? One is led to conclude this after noting the fact that phthisis had been developed in all the thirteen reported cases of congenital contraction. The phthisis in these cases is of the caseous, and not the miliary variety, and its progress, like that of scrofulous phthisis, is slow."

M. Paul resumes with the following conclusions:—

"1. The pulmonary artery is not only the seat of congenital affections, but may also be the seat of acquired lesions.

"2. Of these a very important lesion is contraction of the pulmonary artery acquired after birth.

"3. This contraction occurs sometimes at the sigmoid orifice; it is produced through adhesion of the valves with contraction of the orifice, and sometimes even of the calibre of the artery at this point; it is generally the result of endocarditis.

"4. The contraction may occur at the infundibulum, and so be pre-arterial; this lesion is generally the result of myocarditis.

"5. The contraction may be seated in one of the bifurcating branches of the artery. I have not observed it in the trunk of the artery, as occurs in the form of contraction which is produced in the early months of intra-uterine life.

"6. Beyond the seat of contraction the artery is generally dilated.

"7. This lesion is almost always associated with consecutive hypertrophy of the right ventricle.

"8. Valvular contraction of the pulmonary artery may be accompanied by insufficiency of the same valves.

"9. These may exist at the same time as a lesion of the tricuspid valve and the valves of the left side of the heart.

"10. The special symptom of contraction of the pulmonary artery is a more or less grating systolic *bruit de souffle* which extends over the cardiac region, and attains its maximum over the pulmonary orifice, and a characteristic prolongation along this vessel.

"11. This form of contraction of the pulmonary artery does not give rise to cyanosis.

"12. In acquired pulmonary contraction the ductus arteriosus is closed.

"13. Myocarditis developed during extra-uterine life may cause at the same time pulmonary contraction and a communication between the two sides of the heart.

"14. A contraction of the pulmonary artery associated with persistence of the ductus arteriosus, is not necessarily of congenital origin, it may have been developed in a subject whose ductus arteriosus had remained intact. This,

however, is but a possibility; the probability is that under these circumstances the contraction is congenital.

"15. The extra-uterine origin of contraction of the pulmonary artery may be proved by the fact that the lesions are recent.

"16. Consecutive tuberculization is a frequent complication of pulmonary contraction."

(D) CONCERNING THE ALIMENTARY SYSTEM.

ART. 62.—*Treatment of Diarrhœa, Cholera, and Asiatic Cholera.*

By EDWARD CLAPTON, M.D., F.R.C.P., Physician to St. Thomas's Hospital.

(*British Medical Journal*, September 30.)

In the opinion of Dr. Clapton, Asiatic cholera and autumnal diarrhœa are distinct and specific diseases, but not so choleraic diarrhœa or English cholera. This term appears to have been given indiscriminately to severe forms of diarrhœa and to mild forms of cholera. Such cases are very numerous during cholera epidemics. Ordinary diarrhœa is at such times apt to take on a choleraic type; just as, when typhus is rife, all febrile affections are apt to assume a typhic type; and, when influenza is epidemic, catarrhal affections generally acquire its particular characters.

Simple diarrhœa never drifts on to Asiatic cholera (which is a specific disease, produced by a specific cause), but strongly predisposes the patient to its attack, especially if it have continued unchecked for some time.

The most reliable distinctive marks between autumnal diarrhœa, English cholera, and Asiatic cholera, are the following: in diarrhœa, the face is pallid, but there is nothing characteristic about the features; there is not much constitutional disturbance, except in the severer forms; nausea and occasional griping pain are complained of; the stools are chiefly bilious. In English cholera, the face is indicative of much distress. At the onset, there is considerable griping and uneasiness about the abdomen; but the subsequent stages are generally attended with little or no abdominal pain. The other symptoms are, vomiting; thirst; tongue furred and flabby, but not cold; pulse rapid and feeble; stools chiefly mucous; in the severer cases, serous stools, cramps, hiccup, and intense prostration. In Asiatic cholera, we find sharp features, sunken eyes, and a general leaden hue of the skin; vox choleraic; cold tongue; thready pulse; vomiting; stools serous (rice water); no griping pain, but severe cramps, affecting the abdominal muscles and the calves of the legs; suppression of urine; and a strong tendency to collapse and death.

With regard to treatment, simple diarrhœa, unless of a severer character, scarcely requires any medicinal interference. Rest, and plain, nutritious, unstimulating food, are generally all that is necessary; but, during cholera outbreaks, every case, however mild, should be carefully attended to. As it mostly arises from some error in diet, and is attended with very acrid secretions and an excess of bile, an aperient is obviously indicated at the onset, such as a dose of castor oil or rhubarb. If the griping pain be very great, a few drops of laudanum may be added. Saline aperients are to be particularly avoided. Should the diarrhœa continue, it will be necessary to prescribe astringents, as catechu or rhatany; absorbents, as chalk or bismuth; and perhaps also an opiate to soothe the morbid irritation of the nerves.

Dr. Clapton's experience of the treatment of Asiatic cholera is chiefly derived from the epidemic of 1854, at which time 208 patients were admitted into the cholera wards of St. Thomas's Hospital. They were all watched day and night by Mr. Whitfield and himself, and full notes were taken of each case. There were 67 deaths and 141 recoveries. On referring to these records, he finds that the general and most successful plan of treatment was the hot-air bath at 130°; large mustard poultices to the abdomen and calves of the legs; an ipecacuanha emetic; ice *ad libitum*; iced soda-water. As soon as the

patient could take food, a little milk, arrowroot, or weak beef-tea, was given. In very few cases were stimulants or opiates prescribed. The ipecacuanha emetic, in many instances quickly brought about reaction from the state of collapse, and gave an impulse to the heart's action. Castor oil in frequent half-ounce doses, was given in ten consecutive cases; but six died, and the plan was at once abandoned. Those treated by calomel in frequent doses also presented a large mortality—fifteen deaths out of twenty cases so treated. Creasote, in half-hour doses of one drop, was given to six patients, who were also treated by hot-air bath, emetic, ice, and mustard poultices—five recovered. Quinine, in large and frequent doses, was given in two cases—one recovered. In nearly all the less severe cases of cholera, diluted sulphuric acid in half-drachm doses every two hours was prescribed, in addition to the other means explained. In these cases, the mortality was only one-sixth; but that might have been from the comparative mildness of the attacks.

Choleraic diarrhœa or cholérine was found to be the most successfully treated by commencing with the following draught: *R. Tincturæ rhei* ʒss; *tincturæ opii* m℥x; *spiritus ammoniæ aromatici* ʒj; *tincturæ zingiberis* ʒss; *aquæ menthæ piperitæ* ʒij. Afterwards the following was given every two hours: *R. Acidi sulphurici diluti* ʒss; *tincturæ cardamomi compositæ* ʒj; *aquæ menthæ piperitæ* ʒjss. Simple farinaceous food was allowed, with weak tea or broth, and in some cases a little brandy. Absolute repose in bed should be enjoined in every case.

ART. 63.—*The Lesions of Enteric Fever as an Occasional Cause of Permanent Injury to Nutrition.*¹

By T. CLIFFORD ALLBUTT, M.D.

(*The Lancet*, August 12.)

Dr. Allbutt drew attention to the convalescence from enteric fever, which is well known to be often so tedious; and he raised the question whether the specific lesions of that disease, affecting as they do the instruments of absorption, might not sometimes be the cause of permanent marasmus. In enteric fever the local mischief falls not only upon the patches of Peyer in the ileum, but spreads itself throughout the network of the mesentery. If a rat be fed upon tallow candles and then killed, the presence of the fat in great quantities in the mesenteric network and glands shows how active is that system in taking up this element of nutrition. Any disease, therefore which interferes with this system, like enteric fever within it, or chronic peritonitis outside it, would have its visible effect in hindering the absorption of fat and in preventing the laying on of adipose tissue. These considerations occurred to the author in consequence of his advice being sought in several cases of marasmus, pure and simple, without local disease, without fever, and without adequate loss of appetite. In all of these a severe attack of enteric fever had preceded the marasmus. The patients, who were almost denuded of all adipose tissue, had, previous to the attack of enteria, been in good health. The only explanation which he could give of these cases was, that the fever had acted upon the fat-collecting system in the way already pointed out. The notes of six cases of this kind were then read, but in one of these the marasmus had been preceded, not by enteria, but by a protracted affection of the bowel, improperly named dysentery.

¹ Abstract of a Paper read at the Thirty-ninth Annual Meeting of the British Medical Association at Plymouth.

ART. 64.—*Report of a Case of Large Biliary Concretion in the Ileum.*

By F. LE GROS CLARK, F.R.C.S., Surgeon to St. Thomas's Hospital.

(British Medical Journal, November 4.)

At a meeting of the Royal Medical and Chirurgical Society, on October 24th, Mr. Le Gros Clark gave the details of a case occurring in a patient aged fifty-eight, who was seized with abdominal pain and bilious vomiting, accompanied by constipation. A hard tumor was felt in the right hypochondrium. There was no abdominal tenderness or distension. On the eleventh day the vomiting became stercoraceous. Two days later the bowels were open, and the vomiting ceased until ten days later, when it recurred, and continued at intervals during a week. For three weeks after this time the bowels acted daily, and there was no sickness. The patient was then seized with severe abdominal pain and vomiting; the abdomen was tender, especially over the region of the cæcum, where a hard tumor could be felt. Death took place two months from the commencement of the first attack. At no period of her life had the patient suffered from jaundice. The post-mortem examination revealed the existence of extensive peritonitis. Two large gall-stones occupied the ileum close to the valve. An ulcerated opening in the small intestines had permitted the escape of several small gall-stones into the peritoneum. The gall-bladder was healthy; there were no adhesions between it and any portion of the intestines. There was no trace of any ulceration either in the gall-bladder or in the neighboring intestines. The concretions measured one inch in length and four inches in circumference. They seemed moulded to the shape of the ileum. On examination, it was found that the stones were composed of ninety-five per cent. of cholesteroline, and that nothing had been added to them in the intestines. The gall-ducts were dilated and thickened. The author drew attention to the singular absence of any proof that these concretions had passed by ulceration from the gall-bladder to the abdomen, though this is the only way in which such large bodies could have entered the intestines.

Mr. De Méric asked what diagnosis had been arrived at in this case. He had seen a case in which similar symptoms were present, but in which no post-mortem examination was made. No positive diagnosis was arrived at; but the symptoms preceding death were those of intestinal perforation. The patient sat up in bed, and suddenly died.

Dr. Stewart some years ago saw a patient in the Middlesex Hospital, who had for about a week before death obstinate stercoraceous vomiting. A round smooth gall-stone, as large as that described by Mr. Clark, was found in the upper part of the ileum. The calibre of the intestine above the gall-stone was of ordinary size; but the bowel had contracted on the calculus and was much narrowed below. As far as he remembered, there were distinct marks of ulceration having taken place between the gall-bladder and the bowel. He had believed it impossible for gall-stones of such large size to pass through the ducts. But, the year before last, he was called to a lady who belonged to a family very subject to liver-affections, especially gall-stones. She had long had hepatic dyspepsia, and was seized with severe pain which lasted some hours; after this there was partial ease, and then intense suffering during ten hours, followed by sudden and complete relief. The next day he found that she had passed a round biliary calculus as large as a pigeon's egg. There were no symptoms of perforation of the bowel; and he thought that the calculus could scarcely have passed into the intestine in any other way than through the ductus communis choledochus.

Dr. Habershon saw some years ago a case similar to Mr. Clark's, in which, after much difficulty, a wrong diagnosis was arrived at. The patient was a lady aged more than fifty, who had severe pain, and bilious vomiting, without much tenderness. Death, preceded by great prostration, took place on the tenth day. A large gall-stone was found in the jejunum. There was no peritonitis. Adhesions existed between the gall-bladder and the intestine, but he

could not make out that there was any communication between them. The patient had had no stercoraceous vomiting, because the obstruction was seated too high up.

Mr. Le Gros Clark had arrived at the diagnosis in his case rather by exclusion than in any other way. Whatever the cause of obstruction was, it did not produce inflammation. There was no evidence of twisting of the bowel or of malignant tumor. In the absence of jaundice or of any history of this condition, it did not occur to him to suspect the presence of a gall-stone.

ART. 65.—*Intestinal Obstruction from a Knot on the Lower Part of the Ileum.*

By M. W. TAYLOR, M.D.

(*Edinburgh Medical Journal*, August.)

Dr. M. W. Taylor has given an account of a fatal case of intestinal obstruction, in which a true knot was found after death on the lower part of the ileum. The patient was a married woman, aged forty. She lived fourteen days from the commencement of her illness. She had fecal vomiting on the third day, but throughout the attack there was an absence of inflammatory symptoms. After death, about two inches above the cæcum, a portion of the ileum, about twenty-two inches in length, was found coiled and involved upon itself, so as to form a running knot. The author adds, that one instance of true knotting of the bowel was recorded by W. Gruber, in 1863. Duchaussoy has related a case very similar to that now given, in his *résumé* of 518 cases of intestinal obstruction. In the fifty-four cases of ileus, with autopsies, collected by Dr. Hilton Fagge, from the records of Guy's Hospital, in seven instances volvulus, or twists, were found; but in none knots. The author has met with no case of true knotting of the intestine in the British periodical literature of the last half century.

ART. 66.—*Tænia Caused by the Use of Raw Beef.*

By JOSEPH LEIDY, M.D.

(*Proceedings of the Academy of Natural Sciences of Philadelphia*, May, 1871.)

Professor Joseph Leidy, in an important communication made to the Academy of Natural Sciences of Philadelphia (March 21st, 1871), stated that, "Recently, one of our ablest and most respected practitioners of medicine submitted to my examination a tapeworm which had been discharged from a young man, after the use of the *Aspidium filix-mas*. The physician, in giving an account of the case, stated that he had previously treated the patient for another affection, in which raw-beef sandwiches had been prescribed for food. After looking at the worm, I remarked that it appeared to be the *Tænia medio-canellata*, a species which I had not before seen, and added that the patient had probably become affected from a larva swallowed with the raw-beef sandwiches. The specimen consisted of the greater part of the worm, broken into several pieces. Including some lost portions, it was estimated to have been upwards of thirty feet in length. Unfortunately, the head proved to be absent, but, so far as characters could be obtained from the specimen, in the form of the segments, position of the genital orifices, and the condition of the ovaries, it agreed with the description given of *T. medio-canellata*, rather than *T. solium*. From a want of acquaintance with the former, I did not feel entirely satisfied that the specimen actually belonged to that species.

"Subsequently, my friend brought to me the anterior part of the body, probably of the same individual tapeworm. He observed that his patient continuing to complain, he had administered another dose of the male fern, which was followed by the expulsion of the portion of the worm now presented. The head of the parasite was included, and it confirmed the view that it pertained to the *Tænia medio-canellata*.

"The case serves as another caution against the use of raw flesh as food."

ART. 67.—*Notes on Mucous Disease.*

By WALTER WHITEHEAD, F.R.C.S. Edinburgh.

(Manchester Medical and Surgical Reports, October, 1870.)

This disease "is characterized by the secretion of mucus of an abnormal character over mucous surfaces, in which condition the mucus is prone to consolidate into masses, shreds, or tubular casts. These concretions form and exfoliate periodically, each exfoliation being critical, and immediately followed by an amelioration of the symptoms which aggravate up to this point. This critical period is accompanied by pains of a spasmodic character, and of variable intensity."

The mucus may be discharged from the bowel—1st, in a more or less inspissated condition; 2d, in a concrete or semi-solid condition. The mucous concretions are not always easily recognized when mixed with the motions, but their nature may generally be recognized if they are floated in water. In some cases they are found in masses the size of walnuts; in others we get extensive membranes, thick, and of considerable firmness and tenacity. The formation, exfoliation, and expulsion of these mucous structures observe a regular order; each stage of the disease being attended by characteristic symptoms, which have been described in the notice already alluded to. A microscopic examination of the concretions reveals the following construction. "They are composed of layers of a semi-solid, transparent, hyaline, amorphous matrix, in which spherical cells are imbedded together with epithelial cells in various stages of growth, free nuclei, crystals of the triple phosphate, and undigested and undigestible matter."

A chemical examination of the mucous casts, made by Dr. Andrew Clark, shows that their matrix "is fibrillated by acetic acid. Careful washing and compression yielded a fluid abundantly coagulable by heat and nitric acid. Prolonged digestion of the casts at an elevated temperature in a solution of nitre produced no fluid abundantly coagulable, or precipitable by acetic acid." The disease occurs much more frequently in women than in men, and generally in persons between thirty and forty years of age. The phlegmatic temperament seems to predispose to it. Among the more common symptoms are dyspepsia, palpitation of the heart, a depressed and desponding condition of mind, a feeling as if the digestive tract were raw in places, and a variable condition of the tongue. In addition to these, successive crops of eruptions, and the ulcerations left by them, can frequently be detected in the inside of the lips, cheeks, gums, and tongue. Occasionally, too, membranes, resembling those discharged from the bowel, are expelled from the bladder, and in women, during menstruation, from the uterus.

Mr. Whitehead sums up his conclusions respecting the disease as follows:—

"1. That the mucous membranes, like the skin (and is not the one looked upon as inversion of the other?) is prone, under certain conditions, in certain constitutions, to develop products unnatural to their functions. It is not natural for the skin to produce eczema, neither is it natural for mucous surfaces to produce mucus in a concrete form.

"2. (A.) That the proximate cause of the symptoms referable to this disease is the hypersecretion and accumulation of mucus on the free surface of mucous membranes; such accumulations sheathe and prevent the healthy performance of the functions natural to the part, and thus induce immediate and remote results, the effect of such suppressed functions. (B.) That this hypersecretion indicates a want of balance between nerve-force and germinal matter. (C.) That the nerve-force is perverted by irritation. (D.) That the exciting causes are numerous. (E.) That it is a character of mucous secretions under the influence of irritation for its cell-elements to increase, and its viscosity to diminish. (F.) And that in the disease in question the prolific cell-formations become entangled in the albuminous fluid in which they are found, and present the membranous structures before referred to."

The prognosis is not unfavorable in recent cases, or in those in which the cause of the irritation can be removed, but whenever the disease becomes chronic, it is generally found to be intractable to remedies. The principal points in the treatment are as follows :—

1. "Discover and counteract any cause, either in direct contact, or in the immediate vicinity of the secreting surface, which can be traced as a source of irritation, such as accumulations of scybala, an inflamed pile, or the use of any drugs known to be hurtful in this condition of the system." This applies with especial force to drastic purges. Belladonna and enemata may be given to relieve constipation. 2. "Reinvigorate the strength and allay the nervous irritability. 3. Remove the accumulated mucus; and 4. Prevent its reformation." To fulfil the second indication, bromide of potassium, the various preparations of iron, attention to the skin, and the regulation of the diet, are recommended. To meet the third, injections of solutions of soda, potassa, and lime may be used, and the re-formation of mucus will be best prevented by the use of astringent solutions. The paper is illustrated by ten cases, and appended to it is a full bibliography, which adds very materially to its value.

ART. 68.—*Chloride of Ammonium a Specific in Hepatitis and Hepatic Abscess.*

By WILLIAM STEWART, M.D.

(*Medical Press and Circular*, August 30.)

According to a paper by Dr. William Stewart in the *Burma Press* and in the *Madras Monthly Journal of Medical Science*, chloride of ammonium is a specific in certain hepatic diseases common in India. He says :—

Since the first of September, 1869, from which time the systematic treatment of hepatitis by chloride of ammonium first commenced (a period of nine months), thirty-one cases of the disease have been treated, either by myself or the assistant-surgeons of the battalion; and of these six were undoubted cases of abscess of the liver, presenting the physical signs, the general symptoms, and the well-marked hectic fever diagnostic of the disease under such circumstances. In four of the cases the hectic fever was severe; in one especially so, and accompanied with excessive wasting of the tissues, and extreme prostration of the vital powers—patient exhaling the cadaveric odor at times observed in low and exhausting disease with typhoid symptoms.

Hepatitis is a disease of this station, and has been the occasion of much mortality here, as elsewhere. From a statement, kindly furnished by Dr. Shelton, Principal Medical Officer, British Medical Service, I find that in the headquarters of the 24th Regiment, Rangoon, and Detachment, Port Blair, out of a total strength of 795, there were, during the year 1868, thirty-two admissions and five deaths from hepatitis. "The post-mortem in each instance shows the cause of death to have been hepatic abscess."

During the same period (1868), in the 21st Fusiliers, at Secunderabad, out of an average strength of 868, there were eighty-six admissions and six deaths from the same cause. The disease was treated on the usual expectant plan, and with a result not very satisfactory. Compare these figures with those which follow, and see how different is the result obtained under the treatment by chloride of ammonium.

Since September 1st, 1869, to May 31st, 1870 (a period of nine months), there have been thirty-one admissions from hepatitis at this station, out of an average strength of 608; of these, six were undoubted cases of abscess of the liver, and in several abscess was strongly suspected. All of the above were successfully treated without a single death. It is also remarkable that, since the arrival of the battalion at this station at the end of December, 1868, up to May 31st, 1870, embracing a period of seventeen months, there have been fifty-eight admissions from hepatitis, and but one death, the fatal termination in this instance furnishing negative proof corroborative of the testimony already adduced of the very great success of the chloride of ammonium treatment, for

it is to be observed that the patient died at a period antecedent to the introduction of that practice, that dysentery of a very severe type supervened, uncontrolled by any of the remedies employed, and that the autopsy revealed the existence of abscess, which occupied almost the entire liver, the structure of which was reduced to a mere shell. The large intestine was ulcerated throughout its entire extent, and in places gangrenous.

In not one of the cases treated by chloride of ammonium was there the slightest tendency to dysentery observed.

According to the Army Medical Department Report for 1867, out of a total strength of 56,896 European troops in India, there were, during the year, 3078 admissions from hepatitis, and 157 deaths. During the same period, 368 were invalidated on account of the disease, and 96 were discharged the service at Netley.

Careful nursing is necessary, as is absolute rest in the recumbent posture; since relapses may occur from so slight a cause as an attempt on the part of the patient to turn in bed. In a further paper on chronic hepatic abscess, he asserts that the remedy is equally efficacious. "In short," he says, "I have found it valuable in hepatic affections of whatever form, whether depending on organic disease or functional derangement. I have also found chronic dysentery, associated with chronic disease of the liver, yield to a few twenty-grain doses of the chloride of ammonium, after ipecacuanha and other remedies had failed; and I have before me notes of the case of a young officer, similarly affected, whose dysentery was checked after a few doses of eight grains each. In such cases, from five to twenty grains may be given, dissolved in two ounces of infusion of cascarilla, twice or thrice daily, according to circumstances; and, to cover the saltish taste of the medicine, a little ext. glycyrrhizæ (say gr. v) may be added to each dose. In passive congestion of the liver from cardiac disease, I have found a few doses (gr. xx) of the medicine effect a remarkable reduction of the enlarged viscus, and afford great relief to all the symptoms; in fact, the specific action on the liver is manifested in almost all the diseases to which that organ is liable."

(E) CONCERNING THE GENITO-URINARY SYSTEM.

ART. 69.—*Table for the Examination of Urine.*

By J. CAMPBELL BROWN, M.D., Lecturer on Chemistry and Toxicology at the Liverpool Royal Infirmary School of Medicine.

(*Liverpool Medical and Surgical Reports*, October.)

I. Observe the color and appearance of the urine, whether it is clear or turbid, and whether it contains much mucus.

A high color may be due to bile, blood, or purpurine; a pale color may indicate excess of water, and frequently, also, glucose.

II. Observe the reaction to red and blue litmus papers.

Normal urine is slightly acid; if the reaction is alkaline, and the red color of the paper is restored on drying it, the alkalinity is probably due to ammonium carbonate from the decomposition of urea; confirm by observing whether effervescence occurs on the addition of an acid to the urine.

III. Observe the specific gravity.

(a) If the specific gravity is above 1025, test for glucose by—1. Potash solution and heat; glucose gives a dark solution. 2. Add potash, and filter, if necessary, then add copper tartrate and more potash, until a blue solution is obtained; on heating to the boiling point, glucose reduces a red or orange precipitate of Cu_2O .

¹ In cases of diabetes it is generally desirable to estimate the total amount of sugar passed in twenty-four hours, before treatment, and again after some weeks' treatment of the patient. For the methods of estimating quantitatively the constituents of the urine, see Dr. Neubauer and Vogel, *Analysis of Urine*. Translated by Sydenham Society.

(b) If the specific gravity is high, and sugar is not present, add to a portion of the clear urine in a deep watch-glass about one-half its volume of cold concentrated nitric acid; a deposit of hexagonal plates of urea nitrate indicates excess of urea. (Probably excess of phosphates and other salts will be found accompanying excess of urea.)

(c) If the specific gravity is below 1012, this may be due to great dilution of the secretion with water, which will be further indicated by the large quantity passed in twenty-four hours; but it is more generally due to disease of the secreting organs, and is accompanied by albumen, the urine being then frequently alkaline, but sometimes acid.

IV. Heat a portion to the boiling point in a test-tube, albumen may be at once coagulated; add nitric acid drop by drop; a flocculent precipitate indicates albumen; confirm by adding to another portion of the urine acetic acid, filtering to remove mucus, if necessary, and then adding potassium ferrocyanide; a white precipitate indicates albumen. The deposit from an albuminous urine should be examined microscopically for casts, pus, and blood globules.

Boiling alone may first cause a precipitate of calcium phosphate, which will be re-dissolved on the addition of nitric acid. If a turbid urine is rendered clear by boiling, the turbidity is due to urates.

V. Add to a portion of the urine, ammonia in excess; the white precipitate consists of alkaline-earthly phosphates; filter, and add ammonium chloride and magnesium sulphate; the white crystalline precipitate indicates the amount of phosphate which was originally present as alkaline phosphates.

VI. To another portion add ammonia, and filter; then add ammonium oxalate; the white precipitate contains the calcium as oxalate.

VII. To another portion add nitric acid; divide into two parts; to the first add barium chloride; the precipitate contains sulphuric acid as barium sulphate. To the second add silver nitrate; the curdy precipitate contains the chlorine as silver chloride.

VIII. A dark brown or blue color may be due to indican, which is destroyed by nitric acid.

Any color from that of Gregory's powder to an olive-green tint may be due in part to bile.

1. Pour a layer of the urine (concentrated, if necessary) on to a white dish, and add concentrated nitric acid. A play of colors, green, blue, purple, and red, indicates bile pigment.

2. Boil a portion of the urine with acetic acid, and filter to remove albumen, then add a few crystals of cane sugar, and a few drops of concentrated sulphuric acid; a purple tint indicates the acids of bile.

A red color may be due to blood; in this case heat will have destroyed the color, and coagulated the albumen of blood. Examine—

- 1, by the microscope for blood globules, and
- 2, by the spectroscope for hæmatine.

A high color may also be due to purpurine. In this case it is unaltered by heat and by nitric acid. Boil a portion with hydrochloric acid. A dark red or purple color indicates excess of purpurine, of which a small quantity is present in normal urine. Allow to stand for a day; the crystals which slowly form are uric acid, an excess of which frequently accompanies purpurine.

ART. 70.—On Intemperance as a Cause of Chronic Bright's Disease.¹

By WM. ROBERTS, M.D.

(*British Medical Journal*, August 24.)

The generally received opinion, that the abuse of alcoholic liquors is a frequent cause of Bright's disease, has been called in question by Dr. Dickinson in an elaborate argument in his recent work on *Albuminuria*; and the scope

¹ Read at the Thirty-ninth Annual Meeting of the British Medical Association.

of the paper was to examine the evidence Dr. Dickinson relied on in coming to an opposite conclusion. The writer endeavored to show that the pathological facts adduced by Dr. Dickinson were either untrustworthy, or that they had been incorrectly interpreted. Dr. Roberts especially pointed out the fallacy of the argument drawn from the Registrar-General's Reports. It was quite true, as Dr. Dickinson had stated, that the districts which yielded the largest returns of deaths from intemperance did not return an excessive proportion of deaths from Bright's disease; but exactly the same result was obtained when the same statistics were applied to the mortality from cirrhosis of the liver—a disease which is notoriously and chiefly the product of intemperance.

ART. 71.—On the Relative Influence of Bread, Honey, and Sugar upon the Amount of Urea and Sugar Excreted in Diabetes.

By W. WADHAM, M.D.

(*St. George's Hospital Reports*, vol. v. 1870.)

From experiments upon a case of diabetes under Dr. Wadham's care, the following interesting facts were elicited:—

"1. That, irrespective of any change of diet, the amount of urine, urea, and sugar excreted in diabetes varies very greatly from day to day.

"2. That the excess of either of these constituents does not appear to be accompanied by a decrease in the others.

"3. That the addition of honey to the diet causes an immediate rise in the quantity of urine, urea, and sugar excreted, the rise in all these becoming greater as the honey is continued.

"4. That only about half of the sugar given in this form appears to be eliminated by the kidneys in the form of sugar, the remainder being probably burnt off in the lungs or assimilated to the system.

"5. That whatever truth there may be in the asserted benefit derived from the dietetic use of honey in diabetes, in this case it certainly did not act beneficially by diminishing the amount of urea; for not only was the amount of urine, urea, and sugar greatly increased during its consumption, but after it was omitted all these remained higher than they had previously been, the increase being especially noticeable in the amount of urea."

Further experiments made upon other diabetics seemed to prove that the amount of sugar excreted in the urine is far larger after the consumption of a given weight of bread than it would be after the same amount of honey, and after this latter than after pure white sugar. The addition of bread to the diet seemed also invariably to increase the amount of urea excreted.

The practical conclusions deduced from these experiments are:—

"1. That in all cases and in every stage of diabetes, bread, and probably all other amylaceous food, should be strictly excluded from the diet; for, if given, it will largely increase the amount of urine, urea, and sugar excreted and in every way aggravate the symptoms of the disease. It is, however, probable that its injurious effect is less felt by an individual who is at the same time taking exercise and much in the open air.

"2. That honey may advantageously be used as an article of diet, because in some cases, or possibly in some stages, of diabetes a large amount of it may be eaten without materially increasing the weight of urea or sugar excreted; and because, although in other cases an increase of the sugar may occur, this is accompanied by a diminished excretion of urea, and is often very much less in amount than would be represented by the sugar consumed in the form of honey.

"3. That pure white sugar may be added to the diet in diabetes with every prospect of a beneficial result; for its use is accompanied by a diminution in the amount of urea excreted, and when given in large quantities, less than one-sixth of the amount escapes as sugar in the urine, the remainder being either burnt off or otherwise appropriated to the uses of the system."

ART. 72.—On Paralysis of the Bladder, and its Treatment by the Constant Galvanic Current.¹

By JULIUS ALTHAUS, M.D.

(*The Lancet*, August 19.)

In this paper the author, after referring to some important researches on the physiology of micturition lately made by Professor Budge, of Griefswald, enters fully into the pathology of paralysis of the bladder. He eliminates from this affection all cases of mere atony of the viscus from over-distension owing to organic obstructions, such as stricture of the urethra and hypertrophied prostate, and other causes; and likewise all cases of incontinence of the urine, which is generally ascribed to paralysis of the sphincter vesicæ. Real paralysis of the bladder is, according to Dr. Althaus, only observed (a) when the conduction of nervous influence from the pedunculus cerebri to the bladder is interrupted; (b) when the lower part of the lumbar portion of the spinal cord is diseased; and (c) when the normal excitability of the motor or sentient nerves of the bladder is pathologically altered without any central affection being present; most cases of this latter class being of the kind termed reflex or inhibitory paralysis. After reviewing the treatment generally adopted for this condition, the author expresses his opinion that, both in efficacy and quickness of action, the constant galvanic current properly applied is superior to all other remedies which are used for this affection. He then describes the best mode of applying the current in such cases, and winds up by relating three cases illustrative of the different varieties of the complaint. One of these was owing to syphilitic disease of the pedunculus cerebri; another occurred in a hysterical patient; and the third arose from disease of the lumbar cord. In all these cases the paralyzed bladder recovered rapidly under the influence of the constant galvanic current.

(F) CONCERNING THE CUTANEOUS SYSTEM.

ART. 73.—Santonine as a Cause of Urticaria.

By E. H. SIEVEKING, M.D.

(*British Medical Journal*, February 18.)

Dr. Sieveking relates a case in which he prescribed three grains of santonine with five of sugar, the patient being a child of four years old, and very soon after this dose was taken vomiting occurred, accompanied by a severe rash described to him as urticaria, and covering the greater part of the body. As Dr. Sieveking thought that these symptoms might be due to some error in diet (which had in fact been committed), he did not attribute them to the santonine, and he ordered the dose to be repeated. But almost immediately after the medicine had been taken an eruption appeared on the nose, and spread over the whole body, attended with enormous swelling. This rash, however, soon disappeared after the use of a warm bath, and although no vermifuge effect was noticed, the child's health was improved. As Dr. Sieveking thought that the santonine might be impure, this supposition was removed by an analysis of the specimen, and the effects produced upon the patient must therefore be classed among the category of those observed in certain constitutions by the use of copaiaba, shrimps, mussels, &c.

¹ Read at the Thirty-ninth Annual Meeting of the British Medical Association.

ART. 74.—*Treatment of Urticaria.*

By A. M. LYLES, M.D.

(American Practitioner, May.)

Dr. Lyles, of Early Grove, Mississippi, writes that he has found, for many years past, that ten drops of nitro-muriatic acid in a wineglassful of water, one hour before eating, is an almost unfailing remedy for urticaria. He has observed that the disease is attended by the generation, in the alimentary tube, of an excessive amount of acid, which the nitro-muriatic acid, given as above, corrects.

ART. 75.—*On Frontal Herpes Zoster.*

By Dr. LAQUEUR.

(Annales de Dermatologie et de Syphilographie, No. 6, 1871.)

There are two particulars in which zona frontalis, in addition to its difference in situation, is distinguished from zona in other regions of the body:—

1. The vesicles extend very deeply, and almost always leave indelible cicatrices.

2. The violent neuralgia very often persists for some time after the complete cure of the eruption.

Seat of the Eruption.—This is rigorously limited to the cutaneous distribution of the ophthalmic branch of the fifth nerve; consequently we find the vesicles on the forehead, on a part of the temple and cranium, on the upper eyelid, and on the integument of the nose as far as the point. But it is only in one out of about ten cases that the eruption is presented in all the regions supplied by the ophthalmic nerve. Much more frequently it follows the track of some one only of this nerve's ramifications. The following propositions detail what I have learnt from experience with regard to this point:—

1. In zona frontalis the eruption constantly exists on the forehead (along the distribution of the external frontal nerve); very frequently, also, at the inner part of the superior eyelid (course of the internal frontal nerve).

2. The eruption may show itself singly in the integument supplied by the external frontal nerve, and occupy part of the temple and of the side of the cranium; it never, however, exists singly along the course of the external frontal nerve.

3. In more than one-third of the cases the eruption is limited to the distribution of the frontal nerve.

In one-half of the cases the eruption is found in the integument supplied by the nasal nerve. It may break out along all the ramifications of this nerve (the internal angle of the eye, the root, side, and lobule of the nose), or it may follow one only of these.

In three out of fifty-two collected cases frontal zona was complicated by herpes of the parts supplied by the second branch of the fifth nerve (upper lip, velum palati, cheek). In one case there was paralysis of the common oculomotor nerve, which disappeared with the cure of the zona frontalis.

Ocular Complications.—In one-half of the cases zona frontalis is complicated by affections of the eye. The lids become red, swollen, and oedematous, even in those cases where they are not the seat of the eruption. This swelling of the eyelids and the neighboring parts resembles that produced by erysipelas, and there have, indeed, been frequent errors in diagnosis.

The conjunctiva is often injected, but it should be remarked that neither upon this membrane nor upon the cornea is to be found any trace of vesicular eruption.

Mr. Hutchinson and other observers have found that the ocular affection which so frequently complicates zona frontalis presents itself under two forms. The first is that of ulcerative keratitis. Here there is formed, more frequently

at the periphery than at the central parts of the cornea, one or more softened or ulcerated patches, which have some resemblance to those occurring in variola. These ulcers usually heal, but leave specks. In certain cases they may become aggravated, and be complicated with persistent iritis, and lead by their perforation to loss of the eye. The second form under which the eye participates in the pathological process of zona frontalis is iritis. This iritis has nothing special about it to distinguish it from other forms of the affection. It is usually an exudative iritis, leading to posterior synechia. The intensity of the phlegmasia rarely attains a high degree.

These ocular affections do not coincide with the eruption, but, as Bowman has remarked, seem to succeed it after a short time. Sometimes they come on during the healing of the exanthem.

Under what conditions are these ocular complications manifested? Mr. Hutchinson has established it as a rule that the eruption always remains intact when it is restricted to the distribution of the frontal nerve. This rule, although true for a great majority of cases, has not an absolute value, for my tables show that in two cases in which there was keratitis and kerato-iritis, the eruption had not passed the limits of the forehead. Mr. Hutchinson has also shown that the ocular complication constantly occurs when the eruption has followed all the ramifications of the nasal nerve, and when, consequently, the side and *lobule* of the nose are covered by vesicles. This proposition, I find from my tables, to be perfectly exact. The reason of this may be readily comprehended. The nasal nerve, of all the divisions of the fifth, has the most intimate connections with the globe of the eye, since it is this which supplies the sensory root to the ophthalmic ganglion, and it, moreover, gives rise to several ciliary nerves.

Differential Diagnosis.—Mr. Bowman and M. Steffan state that experienced practitioners have often confounded this affection with erysipelas of the face. The following are the differential signs of the two affections:—

1. Herpes zoster does not give rise to any febrile condition; erysipelas, on the other hand, is accompanied by marked fever.
2. Zona frontalis is preceded and accompanied by violent neuralgic pains, which are absent in erysipelas.
3. The seat of zona frontalis is restricted to the distribution of a cutaneous nerve; it never passes beyond the middle line, which erysipelas rarely respects.
4. The vesicles of herpes are numerous, small, collected in groups, and never form large phlyctenulae, as in certain forms of erysipelas.
5. Zona frontalis often gives rise to ocular complications, and very frequently leaves indelible cicatrices; erysipelas but compromises the eye, and heals without the formation of cicatrices.

There is no other cutaneous affection with which zona frontalis can be confounded.

Nature of Zona Frontalis.—According to the hypothesis of Baerensprung, which is based upon an interesting case reported by Charcot, the starting-point of this affection is supposed to be the spinal ganglia. M. Eulenburg holds that zona, like urticaria, is an exanthematic angio-neurosis. The number of carefully made autopsies is much too small to permit me to form any decided opinion concerning the essence of this curious malady.

Treatment.—The local treatment ought to be as simple as possible. The vesicles should be covered by simple cerate or glycerine, or fine starch powder. Means intended to prevent or check the development of the vesicles, such as the application of collodion, incisions, and cauterizations, are quite useless.

The concomitant neuralgia often requires special treatment. I agree, however, with Mr. Bowman, that we possess no sure medicinal means of relieving these horrible pains. Quinine has proved efficacious in some cases, and has been recommended by Hutchinson and Krietmaier. In many other cases quinine and also Fowler's solution have been altogether inefficacious. Hypodermic injections of morphia often, but not always, give temporary relief. Crépinal recommends the application of oil and chloroform (one part of the latter to three, four, or five parts of the former), whilst Baerensprung asserts that the external use of chloroform has not given in his practice satisfactory results.

There remains as a last therapeutical resource *section of the nerves*. This has been practised twice by Mr. Bowman. In the first case the supra-orbital nerve was divided. It undoubtedly suppressed for several weeks all sensation in the region supplied by the nerve, but in the neighboring parts the sensibility remained the same. At the end of a few weeks the pains returned, even in the track of the divided nerve. Mr. Bowman thinks that the relief would have been more marked if the section had been made at a deeper part. In the second case the supra-orbital nerve at the trochlear branch of the nasal nerve was divided. The relief obtained by neurotomy was very considerable, although the pains persisted in the interior of the nose, the nerve of which could not be reached with the knife. The amelioration lasted for a long time. This relatively happy result has induced Mr. Bowman to recommend section of the nerve in all rebellious cases.

ART. 76.—*On the Treatment of Psoriasis by Balsam of Copaiba.*

By HENRY S. PURDON, M.D.

(*Dublin Quarterly Journal of Medical Science*, May.)

The balsam of copaiba was found to possess special virtues in the treatment of psoriasis by the accidental circumstance of a patient having been admitted into the Hospital of St. Denis, suffering at the same time from gonorrhœa and psoriasis, when the copaiba being administered for the cure of one disease, it was found that both were cured at the same time. M. Hardy therefore introduced copaiba into the list of cutaneous therapeutical remedies. Dr. Purdon states that he has had lately under his care an unusually large number of cases of psoriasis at the Belfast Hospital, and that he has met with great success from the administration of large doses of balsam of copaiba, given with a little liquor potassæ, mucilage, and water. He also states that he has been able to discharge his patients sooner by means of the balsam treatment than by any other, and moreover that none of them have yet had a relapse, but still he admits that it is too early to speak positively on this point at present. He endeavors to account for the beneficial effects of the copaiba in psoriasis by supposing that this balsam acts as an irritant of the solar plexus, which through the medium of the vaso-motor nerves then causes inflammation of the skin in the form of urticaria or erythema. He then quotes John Hunter in his well-known aphorism that two inflammations cannot coexist, as one of them destroys the other, and hence the development of urticaria, which is an inflammatory disease, neutralizes the other inflammatory disease, which is psoriasis. Whether this explanation be true or not, Dr. Purdon has found the plan successful, and he gives an account of one case under his care in which the copaiba treatment was causing the disappearance of the psoriasis, but chorea supervened, for which iron and arsenic were administered. He raises the question whether the same morbid cause gave rise to the psoriasis and the chorea, or whether the psoriasis was "transformed" into the chorea according to one of the views of Trousseau. Dr. Purdon's patient recovered completely from both diseases.

ART. 77.—*Plica Polonica.*

By M. URBANOWICZ.

(*Archives Générales de Médecine*, Jan., Fév., Mars; and *Brit. and Foreign Medico-Chir. Review*, October.)

M. Urbanowicz, a Polish practitioner, has communicated a thesis on *Plica Polonica* to the faculty of Strasbourg. He examines the claims of *plica polonica* to be a special malady transmitted by contagion, or to be a diathesis which may be hereditary. He finds the plica never attacks persons with short hair; that it is a simple matting (*intrication*) of the hair produced by negligence, and at times also by the employment of agglutinative substances. It presents no

characteristic group of symptoms, and runs no characteristic course. The formation of plica does not produce any amelioration of other diseases which accompany it; it is not a crisis, and, contrary to prevalent prejudice, the section of the plica is not injurious, but, on the contrary, is the first step in its rational treatment. Guensberg, in 1843, believed that he had discovered a peculiar mycoderm, the *trychomaphyton*, in plica; it has been described, and has been used to give plica a scientific existence, but the tricoma has not been again found, or it has been proved identical with that of herpes tonsurans. The author considers it proved that in the *intrication pliqueuse* there is no change in the bulbs, roots, or shafts of the hair, and that any cryptogams and parasites that are produced are developed secondarily.

ART. 78.—*Treatment of Alopecia.*

By "An Old Practitioner."

(*Medical Times and Gazette*, September 30.)

In answer to a "Young Practitioner," in *Notes, Queries, and Replies*, "an Old Practitioner" advises the repeated application of some preparation of cantharides to the form of porrigo named decalvans by Bateman, and by Celsus alopecia. Dupuytren, it is told, was the first who employed cantharides in this obstinate complaint, with almost invariable success; the use of it has never been attended with any deleterious effects.

ART. 79.—*On Lupus Erythematosus.*

By THOMAS W. NUNN, F.R.C.S., Surgeon to the Middlesex Hospital.

(*British Medical Journal*, October 21.)

At a meeting of the Clinical Society of London, on October 13th, Mr. Nunn read a paper on *Lupus Erythematosus*. This disease, known also as superficial lupus, was believed by Mr. Nunn to be essentially an inflammatory atrophy of the cutis, limiting itself to that structure, and thus distinguished from *lupus exedens*, which was capable apparently of destroying indiscriminately every structure. Two cases of *lupus erythematosus* were reported, in which the family history afforded no clue to the nature of the disease; and, in contrast, one case of *lupus exedens*, in which an hereditary syphilitic taint was with almost complete certainty to be traced. The first two cases had been treated for years before coming under Mr. Nunn's care with mercury, iodine, arsenic, &c. The first patient, a male, aged thirty-four, had (October, 1870) suffered during thirty-two years, the second during twenty-one years, with *lupus erythematosus* of the cheek. The bromiodine water of the Woodhall Spa, in doses of a wineglassful three times a day, was given, and a tablespoonful of lemon-juice in a tumblerful of milk every morning. In the first case, the gums being spongy, a solution of chloride of zinc (one grain to the ounce of water) was ordered to be applied to them. This case was to all appearance cured at the end of six months. The second patient was still continuing the treatment with advantage, having only commenced it in May last. The case of *lupus exedens* had been in the Middlesex Hospital under the care of the late Mr. Moore, and was now an inmate of the Hospital for Incurables at Putney. Dr. Althaus pointed out the resemblance of the Woodhall and Kreuznach waters, and, in the course of some further remarks, expressed his opinion that, in strumous affections, iodine is too freely prescribed.

ART. 80.—On *Elephantiasis Græcorum*.

By ROBERT LIVEING, M.D., Senior Assistant-Physician to the Middlesex Hospital.

(*British Medical Journal*, November 11.)

True leprosy, or elephantiasis Græcorum, is met with in two principal forms: the first is known as tubercular, the second as anæsthetic, leprosy. It is to a case of *tubercular leprosy* that Dr. Liveing draws attention in this paper.

"Mary Anne Edmunds, aged forty-five, was admitted into Middlesex Hospital on October 5th, 1871. She stated that she was born of English parents in the West Indies, where she remained during the first twenty years of her life. She then resided in England for four years; subsequently she returned to the West Indies for one year, and at the age of twenty-five she went to live on the West Coast of Africa, and there remained until two years ago, when she again came to England, and has since lived in London. She has one brother and four sisters, all healthy. Her eldest son died in Africa; her other children, four in number, are all strong and well, and she is not aware that any member of her family has been afflicted with a similar disease.

"She suffered from what she calls 'climate fever' in the West Indies, but otherwise enjoyed good health, until she went to Africa, where the present disease commenced nearly six years ago. She firmly believes that it was produced by artificial means, some malicious person having rubbed her skin with a poisonous herb, and thus injured her for life. Nothing that we can say to the contrary dispels this extraordinary delusion. She describes the first symptoms as having consisted of vomiting, and pain in the abdomen, with a sensation of numbness and tingling in the limbs, especially affecting the hands and feet; these were shortly followed by slight swellings of the upper and lower extremities, with some discoloration of the skin, and six months afterwards the face became similarly affected; at the same time she began to lose her sight, 'a skin,' as she describes it, gradually growing over her eyes.

"Her state of health has changed but little during the last twelve months that I have had her under my observation, and may be briefly described as follows: She is a tall, well-formed woman, but emaciated; the hands, feet, face, and mucous membrane of the mouth and throat, are the parts of the body most seriously affected. The skin of the hands is of a darkish-brown color, and enormously thickened by tubercular swellings, which are scattered irregularly chiefly on the dorsal aspect of the hand and wrist. The fingers are more uniformly enlarged, and measure in circumference round the middle as follows:—

	Right Hand.	Left Hand.
Index finger	4½ inches.	4 inches.
Middle finger	4 "	3½ "
Ring finger	4 "	3½ "
Little finger	4 "	3 "

"The measurements were made about the middle of each finger. The palms of the hands are comparatively free from disease; on one finger there is a large and painful tubercle, which is now increasing in size, and giving evidence that active changes are going on at this spot. She is quite unable to close the hand, or even to bend the distal joints of the fingers. Brown patches of discoloration are scattered over the skin of the forearm, some of them reaching as high as the shoulder, while here and there a small hard lump can be felt in the skin. There is entire loss of sensibility at the back of the right wrist over a patch of skin rather larger than a crown piece; elsewhere the sense of touch is nearly perfect, although a sensation of numbness exists. The feet, like the hands, are diseased, but in a less degree; they are of a darkish-brown color, patches of the same hue extending up the leg. The face is frightfully disfigured.

gured by the irregular thickening and wrinkling of the cutaneous tissues, which is especially marked above the lips, nose, that part of the cheek just below the eye and the forehead, so as to present the well-known leonine expression.

"There exist the remains of several scabbed sores and scars on the face and hands; a large one is especially noticeable in the centre of the forehead. Rather more than the lower half of each cornea is opaque; but the pupil may be seen by looking obliquely downwards through the upper part, which remains tolerably clear. The patient can perceive light, but is unable to distinguish objects. The tongue is fissured and indented; the mucous membrane of the fauces, soft palate, and epiglottis is much thickened and tuberculated; she speaks in a hoarse whisper, and is troubled with a harsh persistent laryngeal cough, showing that the larynx is seriously involved. The skin of the trunk is tolerably healthy; the senses of taste and smell are not much impaired, and the hearing is perfect. The patient complains of general weakness, loss of appetite, and great difficulty in walking.

"A few days ago a little solution of atropine was dropped into her eyes; this enabled her to distinguish objects, so that she could count the fingers of a hand held up a yard from her face, showing that the loss of sight is due only to the opacity of the cornea.

"With the exception of the above-mentioned parts of the body—namely, the upper and lower extremities, the face, eyes, and the upper part of the respiratory and alimentary mucous tracts—we are not aware that any other organs are at present especially affected by the disease.

"This I take to be an almost typical case of elephantiasis Græcorum; an individual, born in the West Indies, healthy until she was upwards of thirty years of age, then attacked with leprosy, ushered in with the usual premonitory symptoms, such as general debility, numbness, and tingling in the limbs, followed by swelling and general discolorations of the skin, first of the hands and feet, and subsequently of the face; gradual development of morbid growths in the skin of the same regions; general emaciation and loss of power, especially in the lower extremities; blindness, local anæsthesia, and a diseased state of the mucous membrane of the fauces, exactly similar to that of the hands.

"If we could carry on in imagination the history of this unfortunate woman, it would probably be from bad to worse; the mischief gradually extending itself down the larynx and trachea, and thus leading to suffocation; or perhaps an accidental inflammation of the lungs or some other important visceral organ may cut short a life of helpless misery."

The chief predisposing cause of this remarkable disease is, Dr. Liveing states, no doubt an hereditary taint, which, however, is not applicable to the above case, inasmuch as the patient was born of healthy English parents. We must look then to the exciting causes alone to account for its appearance. Amongst them, those most generally believed in are malarial poison, fish diet, putrid food, and bad general hygiene; but leprosy sometimes occurs without any of these attendant circumstances; all no doubt promote this form of elephantiasis, just as they promote many other maladies, but the real origin of the disease remains yet to be discovered. The disappearance of leprosy from England under improved hygiene merely proves that the disease, like the plague, is nursed and fostered by poverty and filth.

Against the hypothesis that it depends on some malarial poison, we have the fact that it is common in some well-drained and otherwise healthy districts, and that the whole course of the malady, its morbid anatomy, with the growths of new and adventitious tissue, ally it much more closely to such diseases as lupus, cancer, and syphilis, than to ague and tropical intermittent fevers, which we know to be of malarial origin.

Dr. Liveing sums up what is known of its general pathology in three short sentences. 1. It is a widespread malady, though confined to certain countries which differ much from each other in race, climate, and geographical configuration. 2. It is more or less hereditary. 3. It is a disease of young adult life.

With the morbid anatomy of leprosy we are pretty well acquainted. There are two points in reference to this part of the subject which Dr. Liveing particularly impresses upon us: the first is, that elephantiasis Græcorum is not

simply a disease of the skin, but of the whole system; for although it is classed in our text-books amongst cutaneous affections and first shows itself in the superficial tissues of the hands and face, yet in protracted cases almost all the organs of the body may become involved; moreover, the general constitutional disturbances at the outset, and which are never absent during the whole course, point to the fact that it is not simply a local affection. Secondly, the local evidence of the disease is manifested by distinctly *new growths* invading the healthy tissues of the body. If we make a section of the leprous tubercle in an advanced stage, and examine this under the microscope, we find that the normal tissue of the true skin is replaced by a new cell-growth, which seems to destroy the connective and fatty tissues, though it is not confined to the district of the true skin, but extends deeply into the subcutaneous layer, the epidermis remaining comparatively unaffected. Besides the corium, the perspiratory and sebaceous glands are destroyed, and the growth of hairs arrested; the nerves are often invaded by the cell-growth, and become atrophied; the cells composing the new tissue are for the most part very small, generally about the size of pus-corporuscles.

One rather characteristic feature of the disease is the formation of open sores, which are sometimes due to a degenerative change and ulceration in a leprous tubercle, or more commonly to the appearance of bullæ, like those of chronic pemphigus, which burst and leave an unhealthy ulcer, and ultimately a whitish scar. When the patient whose case is above reported first came under treatment she was suffering severely from these open sores; but under the use of tonics and local applications, she was relieved from this troublesome complication.

With regard to the treatment of leprosy, Dr. Liveing is afraid there is little to be said, and that little far from satisfactory. He has had no experience of the late Dr. Beauperthuy's method, said to have been successful in the West Indies, and therefore he does not express an opinion on the subject; nevertheless, the nature of the disease must check a too sanguine expectation that any treatment of individual cases is likely to be permanently successful. Improved general hygiene, with moral checks upon intermarriages amongst those affected, is the only plan that will produce permanent and useful results.

ART. 81.—*Case of Sclerosis of the Feet and Legs, with Complete Anæsthesia, but not Attended by any Locomotor Ataxia.*

By WILLIAM PEPPER, M.D.

(*American Journal of the Medical Sciences*, July.)

Dr. Wm. Pepper reports the case of a man, aged forty-five, who seven or eight years ago was seized with an attack of inflammation of the feet, involving the skin of the feet, and of the legs up to about a hand's breadth below the knees. It was attended with redness, swelling, some heat, and tingling pain. The heat subsided after a time, but the swelling persisted, and he noticed soon afterwards that the sensation of his feet was becoming impaired. From about three inches below the tubercle of each tibia throughout the leg, and over the entire surface of the feet, the skin became blue; its consistency was greatly increased, its temperature reduced, and the whole member had a hidebound, indurated character. The nails became brittle, broken, and discolored, and fell off. There was a tendency to ulceration about the joints of the toes, and cutaneous sensibility was absolutely destroyed. To so great an extent was this the case, that the man took pleasure in lighting large pieces of paper, and then trampling them out with the soles of his bare feet, and in doing this he said that he was not able to feel the slightest sensation of warmth. A galvanic current derived from thirty cells was passed through the skin of both legs and feet, the positive pole being maintained in contact until the entire derm was destroyed by the caustic action of the current, without arousing the slightest sensation. He might be struck a forcible blow with a cane over the exposed surface of the tibia without his being conscious, except by the shock to his

body, of being touched. The toes might be violently trodden on, and he would not be aware of it. The anæsthesia of the soles of his feet was even more extreme than that of the leg. Sclerosis of the legs going on to entire extinction of sensibility is very rare. Despite, however, this complete anæsthesia, the man had not in any degree lost the power of co-ordinating the muscular movements. He could walk perfectly with his eyes closed on the darkest night, although he was unconscious of touching the ground, and felt as though walking through mid-air. The case contrasted with cases of progressive locomotor ataxia, due to sclerosis of the posterior columns of the cord, in the fact that the power of co-ordinating the muscular movements was perfectly retained, although the transmission of sensory impressions from the skin was interrupted. The case therefore seems to have an important bearing on the question of the existence of a true muscular sense, independent of the information derived from the tactile sensations of the cutaneous surface. In some cases of progressive locomotor ataxia, even though the anæsthesia of the soles of the feet is not complete, the patient is not able to walk or even to stand when his eyes are closed. The case therefore affords the strongest pathological argument for the existence of a muscular sense. The man ultimately recovered sensibility rapidly, apparently in consequence of the repeated application of blisters to the diseased surfaces, which probably had the effect of stimulating the derm and the subcutaneous tissue, and of inducing the absorption of the partially organized lymph with which the tissues were infiltrated. The author regards the case as one of sclerosis of the skin in which the proliferation of lymphoid cells had actively advanced, and had induced such pressure on the cutaneous nerves as to cause entire anæsthesia of the affected surfaces.

ART. 82.—*Electrolysis, and its Application to Skin Diseases.*

By A. D. ROCKWELL, M.D., New York.

(*New York Medical Journal*, July.)

A number of the diseases of the skin, Dr. Rockwell states, may be treated electrolytically by means of broad electrodes of various shapes and sizes, covered with flannel, linen, or with simple metallic plates. It is probable that every passage of a galvanic current of much strength through the body is attended by more or less electrolytic action, and it may with entire reasonableness be presumed that, in all the ordinary applications of the galvanic current to the central or peripheral nervous system, a tendency to chemical change is excited.

The following cases are recorded:—

Case of Eczema.—In the case of an old gentleman who had for some months suffered from the chronic form of eczema of the face, the electrolytic and electrotonic effects of the current were strikingly manifest. Alternate applications to the diseased part of the galvanic and faradic currents were followed by a favorable change in the character of the eruption in less than a week, and at the present date, less than a month since the first application, the cure is approximately accomplished.

Case of Psoriasis of Twenty-two Years' Standing.—A case of psoriasis of twenty-two years' standing, with large spots on the hypochondriac and epigastric regions, and on the legs, in a woman of middle life, was treated by galvanization of the spots, together with galvanization of the sympathetic. Both poles were used, but chiefly the negative. The effects were decided and immediate, and in the course of two months the spots had disappeared. The treatment was given three or four times a week. To differentiate between the effects of the peripheral and central treatment was hardly possible. The question whether galvanization of the spine or sympathetic may of itself have an effect on psoriasis, or other diseases of the skin, can only be settled by a number of comparative observations.

In another case of psoriasis, peripheral galvanization in a man of middle life has obtained decided though not rapid results, and it is now proposed to combine, with the peripheral treatment, central galvanization.

Sclerosis of the Skin.—A case of sclerosis of the skin, a disease which is usually regarded by dermatologists as incurable, has derived benefit from galvanization, chiefly with the negative pole, and with a current of as much strength as could be conveniently borne. The patient is still under treatment.

Prurigo.—A case of prurigo in a young man was treated by sponge electrodes over the whole surface. Benefit at once appeared. The itching diminished, and the appearance of the disease improved. In a short time, and by a few applications, the recovery appeared to be complete.

In all these cases the electrolytic effects of the galvanic current unquestionably had much, if not nearly all, to do with the results that were obtained; although the current may have other effects, which perhaps we may never fully understand.

ART. 83.—*Muscular and Cutaneous Anæsthesia, the Result of Cold.*

By A. CORLIEW, M.D.

(*L'Union Médicale*, Sept. 12; and *British and Foreign Medico-Chir. Review*, October.)

Dr. Corlieu records the case of a soldier, aged twenty-three, who was brought to the Ambulance du Presbytère Saint-Roché, on January 27th, 1871. When received he was unable to speak, and had lost power over the whole of the left side. Seven days previously, when lying in his barrack, his left side had been exposed to cold. This was followed by continued formication in the left leg, then in the side and left arm. His voice became weak, and afterwards there was complete aphonia. On examination he was found not to be paralyzed; but there was complete anæsthesia of the whole of the left side. He was insensible to the touch (anæsthesia), to pain (analgesia), to heat or cold (thermo-anæsthesia). The cutaneous sensibility was abolished, but the motility was perverted. In whatever position the arm or leg of the left side was put, it remained, despite efforts made by the patient to change it. He used his right hand to put the left limbs in a position of rest. The case was not therefore a case of catalepsy, but of muscular anæsthesia characterized by want of voluntary power over the muscular contractions. The eyelids were shut on both sides, and the patient could not open them; when opened, he made a sign that he could not see. Phonation was abolished, but the movements of the tongue were free. Respiration and circulation were not affected. The patient was hungry; there was no constipation, no albumen in the urine. Under treatment by warm stimulating drinks and applications, nourishment, acetate of ammonia, the patient first recovered sight on the right side, then on both sides, and then began to recover sensibility and motility in the left leg, but the left arm continued in the same state, and there was loss of voice. He ultimately, however, got well under faradization. The author proposes for this form of muscular and cutaneous anæsthesia the name of *Néurose Cataleptiforme Hemiplégique*.

ART. 84.—*Case of Rhinosclerema.*

By M. HEBRA.

(*Wiener Med. Wochenschr.*, 1870; and *British and Foreign Medico-Chir. Review*, October.)

M. Hebra reports a case of this affection. The disease commenced with an induration of the skin of the under part of the nose, and the upper part of the upper lip. The affected part was hard to the touch, and the integument of a brownish-red color. The patient felt as if the opening of the nares was diminished. There was no pain. The progress of the disease was slow, and the character of the induration remained unchanged. There was no formation of pus or ichorous matter. The different portions of the tegumentary indurations grew in size somewhat independently of each other, so that the part assumed a knobbed appearance. Caustic potash applied to one part

destroyed it, but the surrounding parts, even although involved in the inflammation produced by the caustic after its subsidence, remained unchanged. Hence repeated applications of the caustic are necessary. Hebra had previously recorded ten cases of this affection. In one case Hebra removed the knobs by the knife. Under the microscope the hardened tissue appeared to be hypertrophied, thickened cellular tissue.

ART. 85.—*On the Nervous Origin of certain Cutaneous Affections.*¹

By J. F. PAYNE, M.B.

(*British Medical Journal*, August 24.)

Certain affections of the skin were more or less generally acknowledged to be governed in their distribution by the distribution of nervous structures, and were therefore presumably due to some abnormal nervous activity. Among these were more especially noticeable herpes, or herpes zoster, and that peculiar local induration of the skin called morphœa. In a case of each of the complaints, described in the paper, the cutaneous manifestations were associated with affection of the motor part of the nervous apparatus. In a case of herpes in a child, affecting the right lower extremity, and corresponding to the superficial branches of the anterior crural nerve, the appearance of the eruption was preceded for three days by temporary hemiplegia of the same side. The other case was that of a child suffering from hemiplegia, with some permanent contraction and occasional spasmodic movements of both the upper and lower limb, and in whom part of the skin of the face of the same side was affected with local scleroderma or morphœa. The skin of this part was hard and white, neither raised nor depressed; and the alteration was thought to be confined to those parts of the integument supplied by the superficial branches of part of the fifth cranial nerve. In both these cases the peripheral nervous affection giving rise to the skin disease appeared to be dependent on some morbid condition—in the one case temporary, in the other chronic—of the nervous centres; and that this explanation might be applicable to other cases.

ART. 86.—*On the Changes which take place in the Muscles of the Integument during Cutaneous Affections.*

By T. NEUMANN, M.D.

(*Allgemeine Wiener Medizinische Zeitung*, 1871; *Gazette Hebdomadaire*, No. 37, 1871.)

The smooth muscles of the skin have a more extensive and important distribution than is generally supposed. In addition to the muscular layers of the scrotum, penis, and anterior part of the perineum, smooth muscles are found in various parts of the integument, near the penis and the sudoriparous glands. Moreover, according to Dr. Neumann, they form a horizontal layer at the superficial part of the chorion. The reagents which favor the study of these muscles are acetic acid, chloride of palladium, picric acid, and carbonate of ammonia, which render manifest or color the nuclei and the protoplasm of the smooth fibre.

In a certain number of cutaneous affections these smooth muscles undergo morbid changes, some of which have been already discussed. In variola one may constantly observe swelling of the smooth muscular fibres, which is best marked near the pustules. This swelling differs from the muscular hypertrophy which is produced in lichen rubra, ichthyosis, elephantiasis, prurigo, and scleroma of the adult. It cannot be readily decided in these latter cases whether the hypertrophy be simple or numerical; in fact, the fibres as well as the muscle are hypertrophied, and the muscular bundles become more volumi-

¹ Read at the Thirty-ninth Annual Meeting of the British Medical Association.

nons in their totality. This increase in volume is undoubtedly consecutive, and some attention should be paid to the explanation given by Derby, that the muscular hypertrophy is the consequence of the exaggeration of contractions of smooth muscle destined to express the secretions of the skin through the follicles, the orifices of which are contracted. These morbid changes appear, in successful preparations, to occupy the whole of the muscular bundle, but sometimes the smooth fibres are so much developed that one might be disposed to admit the new formation of these elements in connective tissue.

Besides the hypertrophy of the organic muscles one observes also their atrophy. This process affects equally the muscle and the cells. The contents of the cells are rendered opaque in consequence of a finely granular deposit. Later on the muscular débris is absorbed, leaving fibre cell and the muscles reduced in size. This process is characteristic of senile atrophy of the skin.

SECT. III.—FORENSIC MEDICINE.

ART. 87.—*Antagonism of Poisons.*

By JOHN REECE, M.D., Professor of Medical Jurisprudence in the University of Pennsylvania.

(*American Journal of the Medical Sciences*, January.)

Dr. Reece has conducted a series of experimental observations having reference to the supposed antagonistic action of morphia and atropia, morphia and prussic acid, morphia and strychnia, morphia and aconitia, morphia and arsenic, strychnia and tobacco, strychnia and aconitia, strychnia and tincture of chloride of iron, strychnia and tincture of iodine, strychnia and Calabar bean, and atropia and Calabar bean. He communicates now the results he has obtained by experimenting with opium and hydrocyanic acid. The animals submitted to experiment were dogs, and as a preliminary study, the toxic action of both agents was separately tried on dogs. It was found that both morphia and hydrocyanic acid would induce certain well-marked specific effects. Next morphia and hydrocyanic acid were given in combination. To a strong full-grown dog two grains of morphia and one fluidrachm of ordinary prussic acid were administered, in three divided doses, at intervals; the animal ultimately recovered. The symptoms observed and recorded evinced a decided preponderance of the effects of the morphia over those of the prussic acid, which latter, however, was in a minimum quantity. In some further experiments the two poisons were given in a more equal dose, each in full dose, when the symptoms of each toxic agent were clearly manifested. It was further proved that morphia does not counteract the fatal effects of prussic acid, unless it be in large excess over the latter, and not then if the acid be taken in a full poisonous dose. In another series of experiments, it was shown that in cases of death from the combined poisons, the death is undoubtedly attributable to the hydrocyanic acid, rather than to the morphia. It was observed by the experimentalist that in one case, where hydrocyanic acid alone was used, recovery was greatly aided by cold affusion. The inference drawn by Dr. Reece from all his experiments is that the antagonism between prussic acid and morphia is very slight, if indeed it exist at all.

ART. 88.—*On the Treatment of Poisoning by Carbolic Acid.*

By CHARLES ROBERTS, M.R.C.S.

(*British Medical Journal*, May 27.)

The indications for treatment are: to remove the poison from the stomach as speedily as possible, to neutralize its action, and to treat the general symptoms of collapse in the ordinary way. As carbolic acid is very slightly soluble

in water, probably the speediest and most effectual way of removing it mechanically from the stomach would be to administer large quantities of warm water, or mustard and water. As it is very soluble in glycerine, that substance, with water and sulphate of zinc, might be employed, after the bulk of the poison had been removed by the former plan. From the serious action of the acid on the mucous membrane, the stomach-pump should be employed with great care, and probably would often be inadmissible. Mr. Roberts knows of no substance capable of neutralizing the acid chemically; but its well-known affinity for albuminous compounds would point to eggs, and finely minced or powdered raw meat, as likely to be of service. If eggs were used, it would be necessary, for obvious reasons, that they should be very much diluted, by being whipped up with milk or cold water. Milk is not coagulated by carbolic acid, and therefore would not act as a neutralizer, but it would be a more suitable application than oil to the injured mucous membrane, and less likely to produce further discomfort to the patient. The general symptoms of collapse must be treated in the usual manner, by internal stimulants, and friction and warmth to the skin. The rectum would be the most suitable part to which stimulants should be applied. If raw meat were given, it might be well seasoned. As brandy dissolves carbolic acid, and is itself speedily absorbed, its administration by the stomach would be contra-indicated.

ART. 89.—*Bromide of Potassium as an Antidote for Strychnia.*

By W. W. HEWLETT, M.D.

(*New York Medical Journal*, March.)

Dr. Hewlett relates the case of a farmer who took by mistake five grains of strychnine, procured for the purpose of destroying rats, on the evening of November 14th, 1870. Immediately after taking the strychnine he is reported as having retired to rest, and as sleeping for two hours, when he awoke, "feeling much confused, as if something was going to happen." Pains in the abdomen and twitching of the limbs soon followed, with violent tetanic convulsions and opisthotonos. The patient was of very intemperate habits, and his friends, thinking the symptoms due to alcohol, gave him an elixir of opium, which he had taken before for the purpose of quieting the muscular tremor and restlessness of alcoholism. The remedy giving relief, it was administered as he called for it, and he took six teaspoonfuls in the course of two hours. Nausea and vomiting soon ensued, when he felt better, and remained quiet for two or three hours. The pain and spasms coming on again, he drank freely of water, in order to produce the vomiting which afforded so much relief before. He continued in this way until 5 A.M. of the 15th, imbibing freely of cold water and vomiting profusely: violent tetanic convulsions occurred at intervals: at 5 A.M. the paper which had contained strychnine was found, and Dr. Hewlett was sent for immediately. When Dr. Hewlett arrived he found the patient unable to move the extremities, but the intellect was clear. His head was drawn forcibly backwards, and he was suffering the most painful and violent spasms, provoked by the slightest attempt to move, by the entrance of any person in the room, or the closing of a door. As the man could swallow, Dr. Hewlett gave him 90 grains of bromide of potassium, a *dernière ressource*, every half hour. In twenty minutes after the administration of the first dose there was perceptible improvement, which continued. In two hours more the man could move his arms. The bromide was then given at the rate of a drachm every hour; but the convulsions coming on again with greater severity, the remedy was given for one hour at intervals of fifteen minutes. At the end of the hour the patient felt easier again, and the bromide was continued, in smaller doses, at intervals of half an hour to two hours, according to circumstances, during the day and the following night. In twenty-six hours from the time when the bromide was first given he was walking about, feeling a little weak, and occasionally with a slight twitch. The case ended in recovery.

ART. 90.—*Milk as an Antidote to Poisoning by Nitrate of Silver.*

By ERNEST HART, M.R.C.S.

(British Medical Journal, May 27.)

Mr. Hart states that while house-surgeon at St. Mary's Hospital, a piece of nitrate of silver with which he was painting the fauces of a child four years old broke, and the larger part of the caustic stick was swallowed. He produced immediate vomiting by forcing his fingers on to the gullet, and sent to the kitchen for a large supply of milk, of which he pumped several pints into the child's stomach and out again. The child had dysenteric symptoms during the next three days, and occasional vomiting. It was kept on an exclusively milk diet, and recovered. Milk is an excellent antidote to nitrate of silver, in virtue of its large proportion of suspended albumen. Mr. Hart uses it in lieu of salt and water for neutralizing the excessive effects of even the mitigated caustic, when employing it locally on the mucous membrane of the eyelids.

ART. 91.—*On a Case of Lead-Poisoning treated with Iodide of Potassium.*

By HENRY THOMPSON, M.D., F.R.C.P.

(British Medical Journal, April 8.)

The patient was a painter, aged twenty-six, who was admitted into the Middlesex Hospital suffering from advanced symptoms of lead-poisoning—viz., frequent attacks of colic, drooping of the hands and fingers, wasting of the muscles of the arm and forearm, blue line along the gums, &c. Iodide of potassium was administered, together with tincture of nux vomica and quinine and iron; compound camphor liniment was applied to the hands and arms; and faradization was employed on the outer aspects of the arms and forearms. The important point in the progress of the complaint was that, some days after the adoption of the treatment, iodism suddenly supervened, characterized by headache, injected conjunctivæ, epiphora, coryza, and great prostration. The use of iodide was therefore discontinued until the patient's condition improved, and then the salt was administered again, and again aggravated symptoms of iodism presented themselves, and all medicines were suspended except opium. Again, however, the patient improved so much that the iodide was resumed, till another explosive attack of iodism supervened, characterized by severe headache, a pulse of 120, a white-coated and dry tongue, colic, and prostration, but no remarkable coryza. There was now a marked improvement in the movement of the hands and fingers. Dr. Thompson finally discontinued the iodide, and eventually the patient improved so much that he was sent to a convalescent hospital. In his remarks upon this case, Dr. Thompson draws attention to the fact that iodide of potassium not only precipitates lead as an iodide, but that it also unites as an iodide of potassium with iodide of lead, forming a kind of plumbo-iodide of potassium. In the case of his patient, he thinks he produced on three occasions not only iodism, but *iodo-plumbism*, and the last outbreak of iodism was followed by marked amendment; and the case probably affords an illustration of the power of iodide of potassium in dissolving lead and eliminating it from the system in cases where the whole frame is saturated with the poison.

ART. 92.—*On Killing Animals without Pain.*

By BENJAMIN W. RICHARDSON, M.D., F.R.S.

(British Medical Journal, October 28.)

At a meeting of the Medical Society of London, on October 16th, Dr. B. W. Richardson read a paper on the possibility of destroying animals intended

for human consumption without the infliction of pain. He recommended the following agents for producing insensibility: 1. Hydramyle and bichloride of methylene; 2. Carbou disulphide, and methylene bichloride; 3. Chloroform or methylene, and coal-gas. When a butcher kills an animal in the usual way, bleeding occurs; there are primary syncopal convulsion after the loss of forty-ounces of blood, and fatal convulsive paroxysm after the loss of about ten ounces more. If the vapor of two drachms of either of the agents referred to were administered, narcotism was produced, and the primary convulsion was suspended, or much reduced; the second was an entirely painless phenomenon. No odor or taste of the anæsthetic was left in the flesh of the animal.

ART. 93.—*Source of Fallacy in Estimating the Mortality from Chloroform.*

By GEORGE BUCHANAN, A.M., M.D., Surgeon and Lecturer on Clinical Surgery, Glasgow Royal Infirmary.

(*The Lancet*, October 28.)

The object of this communication is to show that one of the sources of fallacy which have been suggested is *not* an ideal one, but must be taken into account in any statistical enumeration which may at any time be drawn up. It has often been stated by writers on this subject, that a certain number of deaths which have occurred while persons have been under the influence of chloroform, must be set down to natural causes, wholly independent of the anæsthetic. To some, this has seemed so unlikely as not to be worthy of consideration; but when we compare the number of sudden deaths which happen in any community, with the very rare occurrence of death under chloroform, it will not seem so unlikely that the coincidence may occasionally occur. A remarkable case of sudden death, bearing on this question, happened lately in Dr. Buchanan's practice, which has made such an impression on his mind as to induce him to record it.

"A patient from the country, recommended to my care by Professor Allen Thomson, came to town in July last, to have a small epithelial tumor removed from his lower lip. He and his wife took a lodging in the neighborhood of my house, and a day was fixed for the operation. A more urgent case requiring my services happening on the morning appointed, I sent a message that I would postpone the operation till the following morning. Next morning I got a message from the lodging-house landlady, that my patient had gone out the previous day to execute some commissions, and had not returned. Shortly after this I received the startling announcement that, soon after my patient had left his lodgings, he had dropped down dead in the street. There is little doubt, that if I had proceeded with the operation on the morning appointed, my patient would have died during its performance; and I should, for the first time, have been called upon to record a death under chloroform. In this case, the death occurred from 'natural causes,' just about the time appointed for the operation."

The coincidence is sufficiently striking to show that many a patient may die *under* chloroform though not *from* chloroform, and that such a consideration should modify our judgment in estimating the value of tables of "mortality from chloroform."

ART. 94.—*Ophthalmoscopic Signs of Death.*

By M. PONCET.

(*Archives Générales de Médecine*, April, 1870.)

M. Poncet, of Strasburg, has been investigating this point in man and animals. He has invented (and figured) a new ophthalmoscope for this purpose, which requires the eye to be observed in a dark chamber. In four or five

hours, or less, the cornea is often too opaque for light to be transmitted, if the eyelids have not been closed. The cornea should be melted with a drop of water to restore its transparency. Immediately after death, the arteries generally disappear, and the veins are only shown by small, indistinct, irregular clots here and there. The choroidal plexuses are replaced by whitish or slightly rosy streaks in the pigment. The optic disk is yellowish-white, in a fundus generally pale and doubtful in its aspect, without vascularization, but for the clots mentioned. The fact of death having occurred, or of the exact moment when it has occurred, may thus be determined in any doubtful case.

ART. 95.—On the Medico-Legal Significance of Atrophy of the Tympanum, produced by Hardened Cerumen.

By S. Moos, M.D., of Heidelberg.

(*Archives of Ophthalmology and Otology*, vol. i. No. 1, New York, 1869.)

"The long-continued presence of hardened earwax may prove injurious both to the walls of the meatus and the tympanum. Toynbee mentions certain preparations in his museum in which, in consequence of hardened cerumen, the bony meatus was found to be very much enlarged; in other cases the bones had undergone a partial absorption. In one a portion of cerumen was found imbedded in the cells of the mastoid process, into which it had made its way through an opening in the posterior wall of the meatus. In another case, where the cerumen by its pressure had caused an ulcerated opening in the membrana tympani, a portion of it had found its way into the cavity of the tympanum. Toynbee does not mention atrophy of the tympanum caused in this manner by pressure, the reality of which can as little be doubted from the concurrent observations of many others, as its inflammation from the pressure of these hardened masses. To be sure, this atrophy of the tympanum from hardened cerumen occurs but seldom. It occurs somewhat more frequently from long-continued closure of the Eustachian tube in consequence of unilateral pressure on the tympanum; sometimes also as a spontaneous lesion of nutrition in the course of chronic non-suppurative catarrh of the middle ear. In the following case the diagnosis was of medico-legal importance:—

"A man, sixty-eight years of age, had been accused of perjury on the following grounds. About a year before, a neighbor had bargained with him for the sale of a piece of land. The neighbor asserted that he had obtained the consent of the accused to part with the land for a certain sum of money. The defendant denied this, and affirmed on oath that he had not given his consent. Plaintiff afterwards brought witnesses who testified to having heard the defendant give his consent. Now the prosecution for perjury was instituted against the defendant. Defendant made objections, stating that he must insist on his former assertion made under oath. If he really had said yes, then he must have misunderstood the plaintiff, as he (defendant) had been hard of hearing long before the pretended sale, and was so at that time. The court committed the accused to me, with the communication of the action, and the request to answer the following questions: 1. Is defendant really and in what degree hard of hearing? 2. Is it possible to state whether defendant has been hard of hearing for one year? Upon examination, I found both external auditory canals filled almost to the outer opening with black masses, which felt hard on being touched with the probe. It took almost a whole week to remove them by the use of dissolving remedies, and syringing with warm water. Before their removal his perception of speech extended only to the distance of two or three paces; the watch (of thirty feet hearing distance) was only heard on pressing it against the ear, and by the bones of the head (corresponding to the age) not at all. After the removal of the hardened masses, his perception of speech was very good on both sides, and the watch was heard at a distance of several feet. The inner end of the meatus, and the circumference of the tympanum on both sides, together with the vessels of the malleus, were much injected (effect of pressure and syringing). Behind the handle of the malleus, on the right side

was found a dark spot about the size of a lentil, depressed below the level of the surrounding membrane, at which, as was distinctly perceptible by simultaneously forcing air into the tympanum, the mucous membrane was forced up like a pouch, and at the same time was considerably injected, so that there could be no doubt that all the layers of the membrana tympani, even to the mucous membrane, were attenuated. I affirmed the accused to be hard of hearing, stating, at the same time, that there could be no doubt it had existed at least a year. I inferred this as well from the hardness of the mass, which, of course, was indicative of the duration of the affection, but especially from the atrophy which was discovered.

"On this testimony the accused was immediately acquitted."

SECT. IV.—THERAPEUTICS.

ART. 96.—*Observations on the Therapeutics of the Present Day.*

By HENRY KENNEDY, A.B., M.B.

(*The Practitioner*, November.)

The following are the leading points to which attention is called in this paper:—

1. That the proper position the physician holds, in reference to the administration of drugs, is that he treats and, with the assistance of nature, cures disease by their means.

2. That our endeavors to improve therapeutics too much must not be expected, inasmuch as there is a limit beyond which we cannot pass, and this limit is and must remain far short of certainty.

3. That if we ignore the labors of our predecessors we will commit a grand mistake, for they have left after them a mass of therapeutic facts which it would not be possible, even at the present day, to excel, and therefore our labors should begin where theirs ended.

4. That the physiological dose of each drug is the proper one to use, as it is only then its therapeutic virtues can be ascertained.

5. That at present the doses of many drugs are much smaller than our predecessors used, and therefore the results in our hands cannot but be unsatisfactory.

6. That our predecessors, whenever it was possible, used medicines in the form of powder, which had the great advantage of being free from any risk likely to be caused by any other mode of preparation.

7. That experiments thus made must lead to more definite results than any made with other preparations of the same drugs.

8. That compound medicines, like the tincture of the perchloride of iron, should be recognized as such, and not as simple drugs.

9. That the use of diluents is a very important principle to recognize in treating disease.

10. That a knowledge of human physiology is essential to give anything of a scientific status to our therapeutics.

ART. 97.—*Cases of Cancer treated with Cundurango.*

By D. W. BLISS, M.D., of Washington, D. C.; Professor of Urinary Pathology in the Medical Department of Georgetown College.

(*New York Medical Journal*, July.)

Dr. Bliss states that his attention was first attracted to this agent during a professional attendance upon Mr. Flores, the Minister from Ecuador, through whom his government had conveyed to the Secretary of State a portion of the shrub, together with printed statements of its successful employment by emi-

ment South American physicians. With the hope of benefiting his own patients, and effecting some good for others, Dr. Bliss determined promptly to test its merits by actual experiment, regardless of the charges and possible opposition to which he knew his honest efforts would be subjected by the hypercritical and ungenerous of his professional confrères. Fortunately several cases of unequivocal carcinoma were then under treatment. Accustomed to the remorseless ravages of a malady for which even the surgeon's knife afforded no adequate relief, he approached the experiment not without misgivings of success, but with the fixed purpose to render the test as complete as the limited supply of the plant in his possession would allow.

Mrs. Matthews, the mother of Hon. Schuyler Colfax, had been the victim of mammary cancer for a long period, which had already assumed secondary and constitutional symptoms in a marked degree. On the 29th of April last, Dr. Bliss placed her on the decoction of cundurango, and had the gratification of observing an early and decided change for the better, in both the local and general conditions. One of its almost immediate effects was the relief of pain, and a free diaphoresis, characterized by an odor distinctly observable of the infusion itself. Upon the return of Mrs. Matthews to her place of residence in Indiana, Dr. Bliss still continued to direct her treatment, and furnished the requisite supplies of the medicine.

On the 9th of May, just thirteen days after the commencement of the new remedy, her husband addressed to him a letter, from which Dr. Bliss makes the following extracts:—

* * * * *

"The stony condition of the tumor has given place to softness. This morning I noticed about one-third of the surface has turned from a scarlet to a white color, and it has commenced suppurating, as though the thing were dead and coming out. The whole tumor is very much flattened, the discharge is different and not near so offensive. The greatest improvement is in her complexion. From a *tallowy*, puffy-looking, and somewhat bluish skin, she is regaining her old natural look, the skin shrinking, becoming wrinkled and clear.

"I am so happy in the prospect of a cure that I feel like a new man, as though a ton of lead had been lifted from my heart. Is it not a little singular, it has not had any perceptible effect on her nervous system? Her digestion is good, and she begins to feel that she will get well."

On the 14th of the same month Mr. Matthews writes as follows:—

"This is the seventeenth day since I commenced the use of cundurango; shall cease for a few days, and note carefully the effect. When I began the treatment, Mrs. Matthews's breast was almost as hard as a stone, about four inches in diameter, the cancer itself two inches in diameter, with raised edges, hard and scarlet-colored, bleeding profusely at the slightest touch, emitting an odor of the most sickening and disagreeable kind, discharging a brownish, cancerous, limpid fluid; the countenance bloated, tallowy-looking, with a bluish pallor of the whole face; the lips turned blue at the least exertion, so that I have been very much alarmed, fearing a rapid crisis and dissolution; at the same time the tumor itself enlarged with fearful rapidity, so much so that I could notice the growth from day to day.

"Now all is changed—the countenance has resumed its old, familiar look; she moves about with great sprightliness, the blue of the lips no longer indicating fatigue or effort. The granular swelling under the chin is gone; strength increasing; the tumor itself much flattened and decreased in protuberance; the color changed to a white, maturing sore; the limpid cancerous discharge ceased, and in its place a healthy discharge of white matter much less offensive; the hardened glands are soft to the touch, the whole symptoms indicating most plainly to me that the treatment has, so far, neutralized the poison of the blood, and that another short campaign with cundurango will insure a complete cure."

On the 2d of July Dr. Bliss visited Mrs. Matthews at South Bend, and stated that he was indeed astonished at the rapid change which had taken place. The tumor had become soft, the color natural, the secondary granular deposits had all disappeared. The improved complexion, muscular firmness, and elasticity of spirits, all pointed to an early and complete recovery.

Mrs. Handy, residing on M Street, was the next subject of experiment with the cundurango. This we are told was a highly typical and fearfully advanced case of cancer uteri. The grayish color, unequal, irregular elevations of the ulcer edges, the sympathetic disturbance of the bladder, the paroxysms of intense pain, together with the hot, dry, shrivelled, yellow surface, the wasted muscles, sunken eyes, the small, quick, wiry pulse, revealed one of those sad cases where all hope of remedy fails.

The cundurango, in the form of decoction, was administered first to Mrs. Handy on the 31st day of last month. The beneficial effects of this wonderful remedial agent soon became most apparent. The pain steadily declined, the diseased parts were less tumefied and sensitive, and the discharge was very slightly offensive. The cachectic appearance of the patient improved, and she expressed herself as feeling altogether better.

The next case reported is that of a lady of the family of the Hon. Mr. Gorham, Secretary of the United States Senate, who has had mammary cancer of several months' duration, and her condition was pronounced hopeless by leading Northern surgeons. Dr. Bliss was called to see her on the 1st of June, of this year, and found cancer of the breast, with secondary deposits in the shoulder and humeral portion of the left arm, attended by extreme rigidity of the neck, and almost complete immobility of the affected limb.

A careful daily record has been preserved of this case, also, by which the most decided improvement is indicated. The mammary tumor has grown softer, and the line of skin-attachment bisecting the nipple is much less marked. The head, before stiff, is now perfectly free and movable, while the natural mobility of the disabled arm is restored, and the tissues, before hard, are now soft and natural. The general condition progresses favorably *pari passu* with the local improvement.

The following is a chemical analysis of the plant made by Prof. Antisell, of New York:—

Physical Description.—Stem woody, shrubby, and covered with a greenish or ash-gray bark, the former tint being due to a coating of lichens on the surface. The branches are from half an inch to little more than an inch in diameter, the average being about the thickness of the finger. The woody fibre is straw-colored and brittle, breaking with a sharp fracture; it is almost tasteless, slightly aromatic, and bitter. *Bark.*—This contains whatever medicinal virtues are in the plant. It is of a gray color, slightly ribbed or fluted longitudinally from corrugation, the result of drying; it increases in thickness in the ratio of increase of the stem—in the thicker branches constituting more than half the weight of the whole, in the thinner somewhat less than half; readily separable from the stem by pounding or bruising, when it comes off in clean, longitudinal pieces; brittle in the transverse fracture, having a warm, camphory, aromatic, and bitter taste, resembling the cascarilla of the older collections. Under the lens it is readily resolved into three layers: 1. The inner layer or cambium of reticular woody tissues, having granules of starch, and particles of resin imbedded. 2. A middle layer of woody fibre and dotted ducts, with resinous particles also in this layer. 3. The cuticular or outer layer of bark-cells, of a brown color, and containing tannic acid and coloring matters.

Ratio of wood and bark, average of three examinations:—

Chemical Analysis of Bark.

Bark	49.72
Wood	50.28
Total	100.00

Constitution of bark in one hundred parts:—

Moisture	8
Mineral salts	12
Vegetable matters	80
Total	100

These vegetable matters were separable, by the usual methods, into the following :—

Fatty matter, soluble in ether and partially in strong alcohol	.7
Yellow resin, soluble in alcohol	2.7
Starch, gum, and glucose5
Tannin, yellow and brown coloring matter, and extractive	12.6
Cellulose, lignin, &c.	64.5
Total	80.0

On distillation, no volatile oil or acid was obtainable.

No crystalline alkaloid, or active principle, was separable by the usual method of proximate analysis.

Whatever medicinal virtues the plant may possess must reside either in the yellowish resin or in the extractive. The former is soluble in alcohol, the latter in water. In the water-decoction some of the resin is diffused, but the greater portion of resin is not extracted by water.

The therapeutic position of the plant, judged from analysis, is among the aromatic bitters.

Dr. Bliss regrets that he is "compelled to leave this interesting subject for the present. As facts accumulate hereafter, they will be promptly given to the profession, and his earnest efforts are pledged to extend to the suffering as rapidly as possible the advantage of this new and surprising agent of the *ateria medica*."

ART. 98.—Report of the Board of Governors of the New York Hospital to the State Department on Cundurango.

(*The Record*.)

The following is the Report of the Board of Governors of the New York Hospital to the State Department on cundurango :—

"The undersigned, a committee of the physicians and surgeons of the New York Hospital, to whom were addressed certain packages of a remedy known as cundurango, and claimed to be a cure for cancer, which had been sent from the Department of State in Washington to the Governors of the Hospital, and by them referred to the Medical Officers of the Hospital for trial, report :—

"That they distributed it among medical gentlemen of known capacity, to be administered by them according to directions accompanying the remedy, to patients under their charge suffering from cancer.

"From the written reports of these gentlemen the committee derive the following particulars, which they herewith submit :—

"Dr. J. Dole, of Amherst, Mass., writes : 'June 22d. His patient was a lady, forty-four years of age, mother of two sons. She had a hard, nodulated, flattened cancer, involving the entire right mamma, which was adherent to the ribs, and covered a space between three and four inches in diameter. From the surface there oozed a thin serous discharge. In the right axilla and supraclavicular region there were hard nodules, evidently involving the axillary plexus of nerves and causing severe neuralgic pains extending down the arm. In the left mamma, which retained its form, though wasted, a hard small nodule was felt. The disease had existed about two years and a half, and first developed itself locally in the right mamma soon after a severe blow upon the part. For several years prior to the appearance of the cancer her health had been deteriorated by repeated hemorrhages from hemorrhoids. These had been successfully operated on by ligation about three months before commencing the cundurango treatment.'

"Dr. Dole writes : 'I can say but little concerning the action of cundurango, as most of the effects were negative. It was administered in the form of a decoction (each dose representing what virtue could be thus extracted from exactly eighty grains of the powdered wood and bark), given twice a day at 8

o'clock A.M. and P.M., two hours after food. You will remember Mrs. W.'s condition when she left New York. The following changes took place: 1. The third day of administration she reported (unasked) entire freedom from pain in the nodule under the nipple of the *left* breast, which, up to that time, had been for weeks the seat of severe and constant lancinating pain. This pain never returned. 2. On the fifth day healthy granulations appeared at the edges of the sore, finally springing up in all parts of it, the whole surface presenting from that time a normal appearance; the right arm could be moved with more freedom. 3. The constitutional symptoms not modified; appetite, pulse, respiration, and temperature remaining the same. Bowels somewhat more constipated, but not markedly so. The neuralgic pains continued with unabated severity during the whole time of administration, and were quieted by McMunn's Elixir Opii, given p. r. n. I noticed also the odor of perspiration, which was very marked and peculiar, like the odor emitted from an uncut cadaver; odor of urine strong, but not unlike that of urine in many acute diseases. After each dose of the medicine (at an interval of from fifteen to thirty minutes) a peculiar restlessness showed itself which continued from two to three hours.

"*Summary.*—Medicine continued seventeen days—a decoction representing 160 grains by weight per day; total relief of pain in left breast; improvement in character of sore, and increase in power of right arm, with partial restoration of power of motion without pain. Noticeable change in odor of perspiration, and a peculiar restlessness following the administration of dose. Should say I witnessed this phenomenon fifteen times. Constitutional effect *nil*. The appetite gradually failed, but not more rapidly than could be accounted for by the discontinuance of tonics. In conclusion, doctor, allow me to say, I am very sceptical concerning the power of this remedy, but there was a curious coincidence between its administration and the modification of local symptoms. I tried to guard against any hasty conclusions in the matter. I have hope enough in its power to try it again in a case where the constitutional power was greater than in the case of Mrs. W. The exhibition was stopped eight days before her death; but I was absent, and cannot report on the effects of the change. Dr. B. assures me that the sore continued healthy until death."

"Dr. F. A. Burrall, of New York, reports: 'July 10th, I have been using an infusion of cundurango, prepared according to the official formula, in a case of rodent ulcer, or, as the disease is termed by C. S. Moore, F.R.C.S., rodent cancer. The ulceration occupied the helix and posterior portion of the right external ear, and the adjacent part of the scalp. The patient had previously been using a lotion of a watery solution of carbolic acid, tannin, and glycerine, and the lotion was continued. During the six weeks which were necessary for a trial of the cundurango the ulceration progressed slowly but steadily. No marked general symptoms accompanied the use of the medicine.'

"Dr. H. B. Sands, of New York, writes: 'July 15th, my experience in the treatment of cancer by the cundurango plant is confined to a single case, in which the remedy was administered according to the prescribed directions for a fortnight. The patient, a lady, residing in this city, suffers from cancer of the rectum, and at the time she began to take the medicine referred to the disease was already far advanced, causing a pretty close stricture of the gut. It was noticed that during the brief period the cundurango was used the cancerous growth increased with greater rapidity than at any previous time, and several large nodules of the morbid deposit appeared in the pelvis, causing a protrusion of the abdominal walls. The patient is still living, and intends to make another trial of the remedy whenever it can be obtained.'

"In conclusion, the committee do not consider the exaggerated pretensions claimed for the cundurango plant as a cure for cancer substantiated by the results of the trials herein reported. They would not, however, discourage more extensive and thorough trials of its virtues, especially if such trials could be prosecuted without enlisting popular sympathy, which has already been prematurely evoked, and that without at all promoting the attainment of truth.

"Gurdon Buck, M.D.,	} Committee of Physicians and Surgeons, N. Y. Hospital.
"T. M. Markoe, M.D., vice	
"W. H. Draper, M.D., absent,	

"New York, July 26th, 1871."

ART. 99.—Cases of Cancer treated with Cundurango, at the Middlesex Hospital.

Under the care of Mr. HULKE.

(*British Medical Journal*, November 4.)

Mr. Davidson, the house surgeon of the Middlesex Hospital, has written a short paper on the treatment of cancer by the internal administration of the decoction of cundurango. The results show that this drug is as futile as any of the cancer cures which have preceded it. It was used in four cases—(1) in an ulcerated epithelioma of the roof of the mouth; (2) in primary cancer of the penis, and secondary injection of the lymphatic glands in both groins; (3) in an ulcerated epithelioma of the scrotum; (4) in an ulcerated scirrhus of the female breast. In all of these cases the cundurango had positively no effect upon the progress of the disease.

ART. 100.—On the Toxic Effects of Hydrate of Chloral.

By N. R. SMITH, M.D.

(*Medical Times and Gazette*, September 23.)

Professor N. R. Smith, of Baltimore, has recently communicated a paper to the *Boston Medical and Surgical Journal* on the "Toxic Effects of Hydrate of Chloral," an account of which will prove of interest to our readers. His attention was first called to the subject on his being consulted by an old retired medical man on account of a singular affection of his fingers, attended with desquamation of the cuticle and superficial ulceration, especially about the borders of the nails. It was attended with pain and much morbid sensibility to touch, and was associated with some acceleration of pulse and general malaise. He stated that he had been taking chloral in liberal doses as a hypnotic for some months, and was convinced that it was the cause of the ailment. This was soon relieved by local astringents, but in about three weeks afterwards Professor Smith was called to him on account of severe bronchitis, with a pulse of 140, and extremely feeble action of the heart. Of this he died; and as it is nothing uncommon for aged persons to die of bronchitis, the author did not suspect the use of chloral as being connected with the event. Some weeks after, however, he met with the case of a lady, twenty-two years of age, who was suffering from a precisely similar affection of the fingers, and who had been taking chloral as a hypnotic during a month previously. She was not then suffering from any general affection, but about ten days later she became the subject of general anasarca, the action of her heart being exceedingly feeble, and her pulse counting 140. Respiration was excessively embarrassed, and the urine was found to contain albumen. Under stimulants and diuretics she recovered. Two other cases have come under Dr. Smith's notice, in which the same affection of the fingers followed the use of chloral. He has also recently met with two cases of death from overdoses of this substance. In the one the person took it in doses of half a drachm for a neuralgic affection, and it was supposed that he had died almost suddenly after taking three drachms. In the other case, the patient not receiving relief from a painful affection of the head from a hypodermic injection of morphia, took chloral, and fell into what was supposed to be only a deep sleep, but which proved to be a fatal one. The amount of the dose is not known, but it is supposed not to have been larger than has been often recommended. In the case of a lady who was suffering from pain and restlessness after a severe surgical operation, a drachm and a half was thrown into the rectum, and she sank at once into a state of insensibility, and died in about three hours.

"These cases are, it appears to me, amply sufficient to establish the toxic effects of this powerful agent. It is probable that its poisonous effects are exerted in two ways: 1. When given in a large dose, and especially where the

system may have been charged with it by its previous administration, it at once overwhelms the powers of life, and causes immediate death. 2. It appears, when given in small doses, and continuously for some time, to induce a form of toxæmia similar to that caused by the continued administration of ergot. . . . Another very interesting and important inquiry is certainly suggested by the foregoing observations, crude as they are. If chloroform, developed in the blood from chloral, is productive of such disastrous effects, primary and secondary, can the direct inspiration of chloroform be as innocuous as it is thought to be? The profession are aware of the fatal primary effects of chloroform in numerous instances. It has undoubtedly caused death in many cases in which it had been given with every caution in regard to quantity and mode of administration—in cases, too, in which there existed no malady of brain or heart to forbid its use. In some instances it has been administered fatally in which it had been previously given with a good result. But I would more especially call attention to the chronic poisoning of the blood which I believe results from its free and repeated use. I have administered chloroform as often as any other surgeon in America, both in hospital and in private practice; indeed, I have been constrained to use it in many cases in which my judgment was adverse to its use, for such is the overweening confidence in its effects that many patients refuse operations unless under its influence; but the more I have used chloroform the less has my confidence become in its innocuousness. When I compare the results of my operations performed before anesthetics were employed with those performed during the last twenty years with the aid of chloroform, I am satisfied that unpleasant secondary results were less frequent during the past period than they have been under the use of that agent. I allude to secondary hemorrhage, pyæmia, erysipelas, and hospital gangrene. Whoever will take the trouble to look over the medical journals and retrospects of the last two years, will discover that pyæmia or septicæmia occupies far more space in surgical records than it did before anesthetics were so generally employed.

"When chloroform is administered during the period of an hour or more, as it frequently is, it undoubtedly enters copiously into the circulation, not only powerfully impressing the brain and the heart, but modifying the constitution of the blood and functions of the capillaries. If the effect of chloroform, developed from chloral in the blood, be such as I have shown on the functions of the minute vessels, causing erythema and ulceration in the extreme parts, may we not suppose that the introduction of chloroform more directly into the circulation may produce the occurrence of those results not uncommon before its use? These suggestions, I trust, will not be regarded as impertinent from one who has practised surgery for more than half a century without and with anæsthetic agents. I doubt not that, if they are deemed worthy of any notice at all, they will be rejected by the majority of the profession, but I have an abiding confidence that their truth will be ultimately acknowledged."

ART. 101.—*On Hydrate of Chloral.*¹

By M. CH. BYASSON.

(*Archives Générales de Médecine*, No. 3, 1871.)

M. Byasson, relying upon the comparative action of chloroform, formiate of soda, hydrate of chloral, trichloracetic acid, and trichloracetate of soda on frogs, rats, and dogs, and of hydrate of chloral alone on man, has formulated the following propositions which are contrary to the conclusions of M. Liebreich and of some other experimenters:—

1. The action of hydrate of chloral upon similar organisms differs from that of chloroform.

2. This action is peculiar to this substance, but it may be considered as the resultant of that of the two products into which it is resolved on contact with the blood—viz., chloroform and formic acid.

¹ Communicated to the Académie des Sciences.

3. The action of hydrate of chloral on the animal organism differs from that of trichloroacetic acid and trichloroacetate of soda, which are resolved into chloroform and acetic acid; a part of the chloroform formed by the action of the alkaline carbonates of the blood on the hydrate of chloral is eliminated by the lungs, a part of the formic acid is found in the urine as formiate of soda.

In order to obtain a practical *résumé* of the effective action of hydrate of chloral as has been taught by experience, the author distinguishes three degrees attained gradually and necessarily by increased doses, which, however, vary according to individuals.

First degree.—Feeble soporific action and slight sedation of the sensory nervous system, which may be accompanied by a peculiar intermittent agitation.

Second degree.—Energetic and predominant soporific action with diminution of sensibility: to this period corresponds a calm sleep of variable duration, but without apparent disturbance of the chief functions of life; by successive doses administered as soon as the action of the first has completely ceased, sleep may be maintained during a period relatively very long.

Third degree.—Anæsthetic action, with muscular resolution, complete loss of general sensibility, and death, almost always occurs when this stage has been reached, and the reason of this can be easily given; a considerable dose of hydrate of chloral must have been given, and one cannot at a given moment free the system of the action of a medicinal agent which works progressively until its complete transformation and elimination.

ART. 102.—*On the Therapeutical Applications of the Hydrate of Chloral.*

By Drs. LEAVITT and BEAUCHAMP.

(*American Journal of the Medical Sciences*, April.)

Dr. Leavitt draws attention to the successful employment of the hydrate of chloral in singultus, and he gives the history of one case and alludes to two others which were cured by this drug. The principal case recorded is that of a gentleman, aged sixty, who had long suffered from an obscure disease of the nervous system, and whose sufferings were aggravated by the supervention of an obstinate and distressing hiccough. Ether, bromide of potassium, musk, camphor, &c., were tried in vain, but the chloral hydrate, used in solution in five-grain doses, almost immediately arrested the singultus, and never afterwards failed to counteract the spasm in a most satisfactory manner. Dr. Beauchamp records four cases in which the chloral hydrate was successfully employed. The first was one of delirium tremens, occurring in a stout athletic man, and characterized by very violent symptoms and complete insomnia, and in whom the administration of the hydrate in half-drachm doses induced sleep very speedily, and eventually removed all the symptoms. The second case was one of insomnia accompanying epilepsy, for which the hydrate was given in the dose of a scruple at bedtime, and by this means the restlessness was overcome. The third case was one of convulsions occurring after labor, in a young and otherwise healthy lady, and in whom the hydrate was given successfully in half-drachm doses. The fourth case was one of mental excitement, amounting to delirium, occurring in a young man. The chloral hydrate was given in scruple doses at bedtime, and at first it produced nausea and vomiting, but subsequently its use was followed by quiet sleep and a removal of all the symptoms.

ART. 103.—*On the Employment of Hydrate of Chloral in Hydrophobia.*

By H. W. ELLIS, M.R.C.S., of Doncaster.

(*British Medical Journal*, May 6.)

In the early part of the present year, Mr. Ellis was called upon to attend two cases of hydrophobia, occurring in two children bitten by the same dog and at

the same time. One case was that of a little boy, in whom the symptoms appeared three weeks after the bite. The other case was that of a little girl, in whom the symptoms appeared almost simultaneously with those of the boy. The features of the two cases were pretty nearly the same, and the results were alike fatal; but Mr. Ellis, with the knowledge that all treatment was inefficacious in obtaining a cure, resolved upon trying the hydrate of chloral, in the hope that it might in a measure control the violence and excitement which usually characterize the advanced periods of the disease. In this expectation he was not disappointed, for the drug mitigated the symptoms very considerably. The remedy was administered in doses of a teaspoonful of the syrup diluted with a little water every two hours, and subsequently every hour; and, though there was of course considerable difficulty in the effort to swallow, it was believed that most of the medicine reached the stomach.

ART. 104.—Physiological Action and Therapeutic Use of Chloral.

By J. B. ANDREWS, M.D., Assistant-Physician New York State Lunatic Asylum.

(*American Journal of Insanity*, July.)

Dr. Andrews, in a highly instructive article, gives the results of his experience as to the physiological action and therapeutical use of chloral. He has instituted experiments to determine differentially the effect of chloral in health and disease, and taken frequent pulse-tracings.

From these experiments he concludes, in regard to the physiological action of chloral:—

"1. That the effect of chloral is to reduce the number of pulsations.

"2. That the primary action is to increase the force of the heart's action and arterial tension.

"3. That in large doses, within safe limits, the pulsations are not reduced in number proportionately to the size of the dose; but the effect is more prolonged.

"4. That the secondary effect is to diminish the force of the heart's action and the arterial tension."

"Chloral has been used largely in the Asylum," Dr. Andrews states, "since February, 1870. The whole amount used is 90 pounds, which has been prescribed in 370 cases, as follows:—

Form.	M.	W.	Total.
Mania	69	119	188
Melancholia	30	59	89
Dementia	18	50	68
Paresis	12	1	13
Epilepsy	2	2	4
Employés	8	5	8
	<hr/> 134	<hr/> 286	<hr/> 870

"The average length of time of administration has been to the men 39 days, to the women 43 days. In a case of melancholia marked by the most distressing delusions and wakefulness, it was given in 20-grain doses, for 257 nights, as a hypnotic, without losing its effect, and with the happy result of securing refreshing sleep. The patient recovered. In this case as in others, the value of the remedy was tested by occasionally intermitting the dose. Sixty grains were administered during an attack of mania for 195 nights in succession.

"In cases of insanity of either an acute or chronic character," he says, "the great value of the remedy is as a hypnotic. In the result when used for this purpose, we are rarely disappointed. Patients who would otherwise be out of bed and noisy at night, to their own injury and the disturbance of a ward, are usually quieted and kept in bed, and at last put to sleep, by a dose of chloral timely administered. The great advantage to be derived from a remedy of this

character can nowhere be more fully appreciated than in an institution for the insane. It is also administered during the day in smaller doses to act upon the motor nervous system, and as an ordinary nervous sedative."

The advantages of chloral Dr. Andrews sums up as follows:—

"It is a hypnotic which seldom fails to produce sleep, which usually lasts from four to eight hours.

"The sleep is natural, and one from which the patient can be easily aroused.

"It is more generally tolerated by the stomach than other sedatives.

"It does not constipate the bowels or disturb the secretions.

"It does not injuriously affect the appetite.

"It rarely produces headache or leaves unpleasant effects.

"It does not lose its power by repetition, but the dose may often be reduced after the patient has become accustomed to its use, and seldom demands to be increased.

"When the necessity for its use has ceased, it often, for the first time, becomes disagreeable to the patient.

"Thus far we have met with no case where its administration has induced the habit of its use, which is one of the dangers of opium, cannabis indica, &c.

"It allays muscular spasm and rigidity.

"No ill effects have been experienced from its use in cases of disease of the brain.

"We have observed no ill effects from its use in the reduction of the pulse or of the temperature.

"In cases of the opium habit, it has proved a valuable remedy to secure quiet and sleep, and allay nervous irritation until the system has rallied from the depressing influence of the former drug. In insanity, it is particularly useful to quiet restlessness and muscular activity. The strength of the patient is thus preserved, and time is gained for building up the general health by tonics and nutritious diet.

"*Its ill effects* we have observed are:—

"In some instances it has induced nausea and vomiting.

"Unless largely diluted, it produces a burning sensation in the fauces and stomach.

"In many cases its influence is very rapid, the person falling asleep at once, which sometimes gives alarm to those unused to it."

ART. 105.—*On the Effects of Chloral Hydrate.*

By ROBERT MUNRO, M.A., M.B., M.C., Edinburgh.

(*The Lancet*, July 1.)

Mr. Munro's experience of the use of chloral hydrate, as indicated in the annexed cases, has led him to the following conclusions:—

1. It is of great benefit in cases of mental excitement and functional disturbance of the nervous system, when there is no organic disease of the brain.
2. It is injurious in cases of protracted and great debility, more especially if the body is reduced by unnatural discharges.
3. Its long-continued use, even in small doses, is injurious in any circumstances whatever.

CASES.—1. Mrs. —, suffering from malignant disease of the liver and jaundice, was in the habit of taking a draught with a little morphia at bedtime, which usually did very well. At the request of Professor —, who was called in consultation, I tried chloral. A draught containing twenty-eight grains was given at 10 P.M. Two hours afterwards I was summoned to see her, when I found her restless, much excited, with a quick pulse, and no tendency to sleep. I then ordered the usual draught of morphia, and she soon fell asleep. I continued the chloral for three nights consecutively, gradually increasing the dose; but each night the same result followed, so I discontinued it altogether.

2. A young man suffering from insanity, with great excitement and sleeplessness, caused by too much mental work, fell asleep after the administration of a half-

drachm dose. This treatment was continued for three nights with the same good result, when he was removed to an asylum. He was quite well in about two months.

3. In two cases of chorea it produced sound and refreshing sleep, and was only required for a few nights.

4. In four cases of delirium tremens it acted as a charm in half-drachm doses, repeated every two hours, till sleep ensued. Usually one or two doses were sufficient, but in one case, a strong, stout, vascular man, with great mental excitement and a bounding pulse, I had to repeat the dose a third time, after which he slept for thirteen hours. The second night only two doses were required, when he slept soundly the whole night. On the third day after the drug was administered he was perfectly well.

5. In a case of pelvic cellulitis, about a week after the abscess was evacuated, on two trials it was followed by so much restlessness, sleeplessness, giddiness, and discomfort that the patient positively declined to take it any longer.

6. In several cases of phthisis in which I have seen it used, sooner or later it produced unfavorable symptoms. In one case, after it was used for about a week, the patient became delirious; in another, that of a young lady who had used it for about ten days, the tongue and gums became red and spongy. When I saw her, just two hours after she had taken her dose of chloral, she was listless, stupid, and bathed with a cold, clammy perspiration, and her pulse 130, though previous to taking her draught it was only 90.

7. For the sleeplessness due to age I made trial of it in three patients all upwards of eighty years of age, and in one only was it effective. In this case a gentleman, in his ninetieth year, took it for several months in 10-grain doses at bedtime. By and by he became so giddy, helpless, and muddled in his ideas, that I ordered it to be discontinued, and, as he had been for many years in the habit of taking some soothing draught, I prescribed fifteen drops of chlorodyne in an ounce of fluid magnesia. In about a week after this change the above symptoms were all nearly gone.

ART. 106.—*Carbolic Acid in Aque.*

By M. TREULICH.

(*Wiener Medizinische Presse*, July 2; and *The Practitioner*, August.)

M. Treulich states that obstinate cases of intermittent fever, which are not in any way benefited by quinine, can be rapidly and permanently cured by the administration of carbolic acid, without any disagreeable consequences. The average dose amounted to four grains and a fraction. The acid was given in an infusion of gentian. The author records no less than eight cases, which were associated with large tumors of the spleen and resisted the action of quinine, but were speedily cured by carbolic acid. This experiment supports the view that malarial fever is essentially a parasitic blood-poisoning.

ART. 107.—*On the Influence of Bromide of Potassium on Opium.*

By J. M. DA COSTA, M.D.

(*The Medical Record*, August 1.)

Dr. Da Costa calls attention to the happy influence of bromide of potassium on opium. It does not destroy either the anodyne or the hypnotic effects of the opiate; on the contrary, it rather heightens both, and more particularly the latter. To quote from a patient's letter: "The more bromide I take the sooner do I get sleep after a dose of opium. Two doses of bromide (20 grains each) are not usually enough to counteract the exciting effects, and procure sleep under five or six hours from the time of taking." The faintness from opium is the phenomenon most markedly prevented; next in the readiness of being influenced stand the headache, vertigo, and nausea; then the itching of the surface, and dry mouth. The bromide has seemed to act best when it is given some hours before the opium, and 40 to 60 grains—generally 40 grains—prove sufficient.

ART. 108.—*Turpentine as a Parasiticide.*

By Prof. V. ERLACH.

(Journal de Médecine, June; and The Practitioner, October.)

Professor Erlach, of Berul, recommends turpentine as a means of destroying parasites, which are the cause of certain diseases of the hairy scalp. Kuchenmeister recommends alcohol, which retards or arrests the development of spores and fungi. Experiment has, however, shown that the action of alcohol does not extend to those fungi which develop in the follicles of the hair. Tincture of iodine acts better than alcohol. Yet, even in favorable cases, it is requisite to continue the use of the remedy for at least three months. Erlach applies turpentine with a brush to the parts affected, and states that it acts better, more surely, and more rapidly than any other means he has tried. He states that he has thus cured a case of herpes tonsurans in seven weeks, and several cases of mentagra in a week.

ART. 109.—*Some of the ill Effects of Bromide of Potassium.*

By T. O. WOOD, L.R.C.P., Medical Superintendent of Dunston Lodge Asylum, and Lecturer on Psychological Medicine in the University of Durham.

(British Medical Journal, October 14.)

Having been in the habit of using this drug somewhat extensively in the treatment of the insane, Mr. Wood gives his testimony as to its probable ill effects.

When given continuously and in large doses, it produces a great variety of results, depending generally upon the constitution and bodily condition of the patient at the time of its administration. Its most dangerous effect is when, after a course of comparatively small doses which do not seem to be taking any great hold upon the system generally, or upon the mental symptoms to control which it is given, it *suddenly*, and without apparent cause or warning, displays its cumulative effect, and rapidly reduces the patient to a condition of great bodily prostration, and completely alters the character of the mental symptoms. This physical prostration is at once evident. There are great muscular debility; dimness of sight, with dilated pupils; irregular gait, the patient reeling as though intoxicated; whilst nausea, vomiting, or purgation, with abdominal pain of a dull aching character, may also be present; the breath having a disagreeable odor, which seems peculiar to those who have been for any length of time under the influence of the bromide. Its effect upon the mental symptoms is no less marked. The patient who has been violently excited, glorying in his imaginary power of body and mind, becomes desponding, sullen, melancholic, and frequently lachrymose, often even despairing. One patient, who was discharged from the asylum "recovered," has since stated that he knew and felt for some time afterwards the effect of the medicine upon his mind. It produced a feeling of despondency which at times quite overcame him.

ART. 110.—*Mode of Action of Digitalis in Dilatation of the Heart.*

By J. MILNOR FOTHERGILL, M.D., Senior Resident Medical Officer to the Public Dispensary, Leeds.

(British Medical Journal, July 8.)

In the *Hastings Prize Essay* for 1870, Dr. Fothergill remarks that it is in the condition of distension, or dilatation of the heart, that the advantages of the administration of digitalis are most evident. In this condition of deficiency of expulsive power, the heart-walls yield. The heart is distended, and in contrac-

tion only gets rid of a little blood off the top, remaining more or less full in systole. It is more or less full before the distended auricle and veins behind pour in their contents under the increased pressure of distension. It is in the partially filled condition of the ventricle that the difficulty lies essentially. If the ventricle were not partially full, the auricle and veins would be somewhat relieved; but there is what would fill well an empty ventricle waiting to be discharged into one more or less full to begin with. The action may be moderately regular on quiet being maintained, but it is at once disturbed on motion, especially if this be at all active; and then we get palpitation and irregularity, or even intermittency, the regular action being again restored by quiet. There is a constant contest going on between the stimulus of the contained blood and the inhibitory action of the pneumogastric fibres. The distension excites the muscular walls to overcome the restraining influence; for, without the stimulus of distension, the walls could never overcome the inhibitory action of the pneumogastric, the *vis inertiae* of the blood to be driven; and action still further deranges the balance by making still greater calls on the muscular walls. In fact, the heart is in a state of over-distension, and in a condition both analogous to and homologous with an hypertrophied bladder attempting to overcome the obstruction of an enlarged middle lobe of the prostate. The over-distension goads the organ to such a contraction as shall relieve that over-distension, but only so far, and no further; there is no complete contraction. An incessant play goes on between the condition of over-distension and the restraining fibres of the vagus; the balance between the muscular walls and their work remaining confessedly disturbed. In this condition, the administration of a drug whose physiological action is to stimulate the sympathetic ganglia, and thus the muscular fibres under their control, into excessive contraction, is almost the only means of restoring the equilibrium. This is beautifully exemplified in the heart of a frog, when paralyzed and almost brought to a standstill in diastole by aconite; the heart is distended, globular, and, in every respect but that of chronicity, in the condition of a dilated or distended heart. Then administer digitalis, and watch the result. The distended globe, just pumping painfully a little off the top of the contained blood, and that at long and irregular intervals, begins to contract with more vigor; each ventricular systole is more and more complete; and the bulk of blood remaining unexpelled—and that is the great point—becomes less and less in quantity. Shortly, the distension in diastole is shortened, the distension and contraction come gradually back to the norm, the irregularity in time is lessened, and a complete restoration results. But if the experiment be carried still further, spasmodic contraction or the condition of concentric hypertrophy sets in, irregularity again makes its appearance—for the balance is now disturbed in the opposite direction; in fact, the symptoms of digitalis-poisoning are brought out, and ultimately the heart is brought to a permanent standstill in systole. Thus in a distended heart, only a longer time is requisite, and, of course, the cause of the original distension must be overcome; so that the conditions are scarcely equal, and longer time and an artificial compensatory hypertrophy are necessary to maintain the balance thus temporarily restored. When this condition of distension is only of short duration, as seen in people who have been overworked and overtaxed for a short period only, but presents all the appearances, signs, and symptoms of cardiac dilatation, the restoration of the natural balance by digitalis may be quick and withal permanent.

ART. 111.—*The Therapeutic Action of Quinine.*

By M. MONTEVERDI.

(*La Nouva Liguria Medica*; and *The Practitioner*, October.)

M. Monteverdi, after having made a series of investigations with sulphate of quinine, has arrived at the following results: 1. Quinine exercises a general tonic influence on the organs of the body, and especially upon the uterus. 2. Within half an hour after its administration, transient painless contractions,

which gradually become longer, stronger, intermitting like ordinary labor-pains, and last for about two hours. 3. To effect the expulsion of the fœtus and the placenta, about four-grain doses are most appropriate. 4. Quinine is to be preferred to the *secale cornutum* on account of its harmlessness, both as regards mother and child, on account of the certainty of its action, on account of the regularity and the natural character of the pains occasioned, and also because it is free from danger at all periods of gestation, in contraction of the pelvis, and in complete dilatation of the os, and because it can be applied before the discharge of the amniotic fluid. 5. It is further useful (a) in the hemorrhages of pregnancy, (b) in amenorrhœa consequent on torpid conditions of the uterus, and (c) in puerperal fever. 6. On account of its tonic properties, quinine is indicated in all affections of the digestive organs, and of the urino-genital system, which are dependent upon atony of the different organic constituents. 7. If pregnancy be accompanied by any disease calling for the administration of quinine, great caution should be used, lest abortion or premature delivery be provoked. 8. If the action of the quinine has become too energetic, opiates should be prescribed, and quinine, as a general rule, is contra-indicated in hysteria.

ART. 112.—*The Sesquichloride of Iron as a Prophylactic in Acute Rheumatism.*

By F. ANSTIE, M.D., F.R.C.P.

(*The Practitioner*, September.)

Dr. Anstie states that "a considerable number of persons present themselves in my out-patient room, in the course of twelve months, suffering from the preliminaries of acute rheumatism; it is one of the small group of really serious diseases (amongst a much larger variety of trivial complaints) which occupy one's attention in out-patient practice, and was formerly a matter of great dissatisfaction to me, from the apparently almost total failure of remedies to produce any effect. Whereas threatenings of gout could be very commonly dealt with in such a manner as to prevent the attack, or render it trivial, the onset of acute rheumatism seemed never to be averted by drugs when once the prodromata had reached the stage which pretty frequently presented itself before me—viz., a more or less obscure aching of several joints, a yellow sallowness of face, with patches or streaks of dusky redness, blanket-like furring of tongue, an oily moisture of skin, a distinct though slight elevation both of pulse and temperature, and a certain anxiety of respiration. So far as the history of such patients could be traced, they were almost invariably found to have developed the full symptoms of the acute disease, and very often (after once seeing them in the out-patient room) one encountered them, a few days later, in a ward of the hospital.

"Very different have been the results of treatment since I adopted the use of full doses of sesquichloride of iron from the first moment of such cases presenting themselves. During the past twelve months, I have done this fully. Whenever a patient has presented himself with articular pain and slight fever that were plainly of the rheumatic and not of the gouty type, he has been at once placed on thirty or forty-minim doses of the tincture of sesquichloride, from three to six of which, according to the severity of the symptoms, have been given in each twenty-four hours. I have several times called the attention of students to the fact that (unlike what used to happen) these cases now reappear in my out-patient room on my next hospital day; and, in the great majority of instances, declare themselves greatly relieved. Since July, 1870, I have treated twenty-nine such patients, of whom thirteen had previously had one or more regular attacks of rheumatic fever, for the symptoms now referred to, with the full doses of iron; and of these, seventeen have lost all pyrexia and spontaneous joint-pain within the three or four days elapsing before my next day at the hospital. Only three have, under my own eyes, developed the full acute disease, and been sent into the ward. Of the remaining nine, four

disappeared altogether from my knowledge, so that I cannot say what became of them; the other five, though their symptoms were checked, remained in a state of what might be described as subacute rheumatism during from ten to twenty-two days.

"I cannot help remarking with emphasis on the contradiction to old ideas which is involved in the effect of this iron treatment upon the furred tongue. Of course it becomes speedily blackened; but so far from the furring increasing, or the dryness and foul taste becoming more pronounced, what commonly happens is, that after a few days the epithelial coating falls off in considerable patches, and the tongue soon cleans altogether. I believe the prophylactic treatment of rheumatism by the sesquichloride to be one of the most valuable recent improvements in medicine."

ART. 113.—*Ergot of Rye in the Treatment of Mental Diseases.*

By J. CRICHTON BROWNE, M.D., Medical Director West Riding Asylum.

(*The Practitioner*, June.)

Dr. Browne states that during the last six years he has made an extensive series of experiments with ergot of rye in the treatment of the various forms of insanity, and has arrived at results which he believes to be of considerable practical importance.

"A remark of Brown-Séquard's, imputing to this drug the power of producing contraction of the vessels of the spinal cord, suggested to me the possibility that it might possess a similar control over the vessels of the brain, and might thus be made to modify the functional activity of that organ. This supposition derived probability from a perusal of many scattered observations in medical literature, as to the phenomena of ergotism, and was converted into a certainty in my own mind before I had pursued my investigations very far. As these proceeded, it became, indeed, a matter of surprise that a medical substance, long known and prominently displaying in its toxic effects a potent influence over the nervous centres, should not have been resorted to at a much earlier period as a therapeutic agent in some of the disorders by which these centres are affected. The remarkable uterine relations of ergot, however, seemed to have absorbed nearly all the attention bestowed on it. With the exception of Lallemand and Petrequin, who employed it with benefit in paraplegia, no one has thought it worthy of trial in cerebro-spinal lesions or derangement. No one certainly has tested its efficacy in those classes of cases which I am here to describe as peculiarly amenable to its benignant action. What these classes of cases are it may be as well at once to define, more especially as they do not include all those which the preliminary statement as to its physiological actions might appear to imply. My experience of ergot does not enable me to attribute to it, as yet, any advantageous action in many of those acute forms of mental disorder in which, from its alleged control over the dimensions of the intracranial vessels, it might have been presumed to be most useful. It only justifies me in asserting that it is eminently useful in certain varieties of (1st) recurrent mania, (2d) chronic mania with lucid intervals, and (3d) epileptic mania. In these forms of cerebral derangement I have found it almost uniformly efficacious in reducing excitement, in shortening attacks, in widening the intervals between them, occasionally in altogether preventing their recurrence, and in averting that perilous exhaustion by which excitement is so often succeeded. It can be scarcely requisite to point out that these actions which I have ascribed to ergot constitute it an invaluable instrument in asylum practice, as those conditions over which it is most influential are amongst those which have been hitherto regarded as highly intractable, and which, from the dangerous symptoms by which they are accompanied, have been unfailing sources of anxiety and harassment. Anything which will abridge the duration or favorably modify the course of intermittent, chronic, or epileptic mania, must prove an inestimable boon, not only to the sufferers from these maladies, but to those who have to associate with them and wait upon them."

The action of ergot in the conditions above enumerated, Dr Browne believes, is due to the controlling power which it possesses over the dimensions of the bloodvessels, and he adduces various reasons which appear to him to justify this opinion.

ART. 114.—*Ozokerit as a Therapeutic Agent.*

By HENRY S. PURDON, M.D., Physician to the Belfast General Hospital.

(*Dublin Quarterly Journal*, November.)

In calling attention to ozokerit in the treatment of certain forms of cutaneous disease, Dr. Purdon remarks that as yet his experiments with it have been limited.

Ozokerit is a vegetable wax ; a hydro-carbon, found in Moldavia, Wallachia, the Caucasus, and near the Caspian Sea. In the crude state it is of a dirty greenish color and of a light specific gravity, and somewhat fibrous in structure. When rubbed in the hand for a few seconds, it feels like ordinary wax ; it readily melts, and a rude candle can be made of the "raw material" and a cotton wick. The action of ozokerit appears to be similar to that of tar ; it is not, however, so dirty. The crude is the best, but for private practice the refined may be employed, mixed with glycerine. Its action appears to be that of a stimulant to the diseased skin. It is only suitable for chronic affections, as eczema of long standing and *unaccompanied* by much infiltration of the subcutaneous cellular tissue, psoriasis, tinea tonsurans, and scabies.

Dr. Purdon has suggested to Messrs. J. C. and J. Field, the great candle manufacturers, of London, the desirability of making an ozokerit soap for medicinal purposes.

ART. 115.—*Citrate of Potash in Scurvy.*

By Mr. PALMER.

(*Pharmaceutical Journal*, July 1.)

Mr. Palmer states that his attention has been for some time past drawn to the subject of lemon and lime juice, with the idea of finding a substitute for the horrible mixture of lemon-juice and rum with which our sailors are now drenched by Act of Parliament. As there is no virtue in citric acid, it struck him that perhaps the value of lemon-juice as a prophylactic was due to the potash it contains in combination with an organic acid, and that citrate of potash would answer every purpose. He was further confirmed in this view by the writings of Dr. Garrod, and some experiments made with Mr. Deane of Clapham upon the salting of meat. From an analysis by Professor Atfield of some beef both before and after salting, it appeared that the meat lost nearly 50 per cent. of its potash by the process, and that as the soda salt went in the potash salt ran out ; this deficiency of potash, he thought, might probably be the cause of scurvy. Following up this idea, he then had some citrate of potash prepared, and through the interest of the Board of Trade some experiments have been made at the Seamen's Hospital to test its value. Owing to the singularly few cases admitted into the hospital during the past year, the trials have not been so numerous as could have been wished ; still, in all cases it has been found equally efficacious with the juice ; patients treated with the citrate entering and leaving the hospital on the same day as those treated with lemon-juice. Too much stress, however, it is acknowledged by Mr. Palmer himself, must not be laid on these experiments, as there is some doubt as to which does most in promoting the cure, the lemon-juice, or the extra good diet at the same time.

From the above experiments, Mr. Palmer thinks the salt is well deserving of a trial, and if some large shipowner would take it up and try one against the other, during a lengthened voyage, the case might be at once decided ; and if the citrate should answer the purpose, then the lemon-juice and rum might be done away with forever. This question also involves one as to the use of light

wines, such as claret and hock, in gout, rheumatism, &c., and Mr. Palmer inquires whether the virtues of these wines may not be due to the bitartrate of potash they contain.

ART. 116.—On the Use of Hypodermic Injections, especially in Cholera and Dysentery.

By T. J. GALLAHER, M.D.

(*New York Medical Journal*, May.)

Dr. Gallaher gives in the first part of his paper a general sketch of the history of hypodermic injections, assigning the discovery of this important method of medication to Dr. Alexander Wood of Edinburgh, but likewise giving a due meed of praise to Dr. Charles Hunter for the zeal and ability with which he pursued his investigations on the subject. These gentlemen differed in opinion as to the efficacy of local as compared to general hypodermic treatment; but it seems now generally admitted that there is no marked difference in the effects of a drug subcutaneously injected, whether it be introduced near to or at a distance from the affected part. Dr. Gallaher passes in review the different preparations which have been employed hypodermically, and the maladies in which they have respectively been found useful, as, for instance, morphia in painful affections generally, atropia in spasmodic and nervous diseases, quinia in ague and diseases of debility, Calabar bean in tetanus, &c. The dose of the drugs hypodermically injected is from one-fourth to one-half of that usually given by the mouth; and with respect to the proper place for inserting the remedy, Dr. Gallaher considers that those parts of the body which are supplied by numerous superficial veins should be avoided, and he recommends the arm, near the insertion of the deltoid muscle, as the most eligible situation. The injection of a powerful poison directly into a vein might be followed by dangerous and even fatal effects, and therefore the above precaution is necessary. Dr. Gallaher gives the particulars of some cases of cholera and dysentery successfully treated by himself by the hypodermic use of morphia, these diseases not having been previously treated, as he believes, by this method.

The results in all the cases were very satisfactory.

ART. 117.—Hypodermic Use of Morphia in Operative Midwifery.

By MELVIN RHORER, M.D.

(*Medical Press and Circular*, September 27.)

Dr. Melvin Rhorer, Assistant Demonstrator of Anatomy in the University of Louisville, now in Vienna pursuing his studies, sends the following to the *American Practitioner*:—

"I have in a number of instances seen turning effected long after the liquor amnii had passed, by fully narcotizing the patient. I have never, however, seen the uterus brought to that desirable state of rest whereby the operation may be easily performed when the usual means of producing narcotism have been employed; that is, by chloroform or the internal exhibition of opium. I believe the sovereign remedy in such cases is the hypodermic injection of morphia. I have witnessed its good effects in a large number of cases, one of which, witnessed at the clinique of Professor Braun, I here report. The patient was a strong, healthy woman, thirty years of age, the mother of three children, at whose birth she had had no trouble. Her condition on examination was as follows: The abdomen tense and somewhat sensitive to the touch; the liquor amnii had passed seven hours previously. Her pains were recurring at short intervals; great sensibility on vaginal examination. An arm, purple and much swollen, was found in the vagina, with the corresponding shoulder deeply wedged in the pelvic cavity; the surrounding parts of a higher temperature; the patient much exhausted from pain. One-sixth of a grain of

morphia was injected into the linea alba, midway between the umbilicus and symphysis pubis. In five minutes the hitherto spasmodic action of the uterus was much more feeble, the intervals became longer, &c., and in twenty minutes complete rest was secured. The uterus was soft, and the shoulder movable in the pelvic cavity. Turning was easily and quickly effected, and the child was extracted without causing contractions. By continued gentle friction of the abdomen, the uterus was again excited to activity, and in half an hour the placenta came away. Very soon afterwards the womb had contracted under the symphysis, and the patient continued to do well.

ART. 118.—*The Use of Iron in Scarlatina.*

By RUSSELL ALDRIDGE, M.D.

(*British Medical Journal*, August 12.)

Dr. Russell Aldridge draws the attention of the profession to the use of iron in scarlatina. He has given it for the past two years with great success; so much so as to induce him to believe that in it we have a powerful remedial agent for that disease. He has found, if it be given as soon as the disease makes its appearance, that not only does it shorten and lessen the severity of the attack, but it also fortifies the patient against the after-consequences—dropsy, &c. The form which he has mostly used has been the liquor of pernitrate of iron, in syrup or glycerine, in doses of ten minims every three hours for children of from one to six years, increasing, according to age, to fifteen, twenty-five, or thirty minims. During convalescence, he has given citrate of iron and quinine, ammonio-citrate of iron, or syrup of phosphate of iron, according to circumstances. This, with the exception of warm fomentations to the neck in cases of scarlatina anginosa, is all the treatment he has adopted.

ART. 119.—*On the Employment of the Sphygmograph in determining the Action of Remedies.*¹

By WM. CARTER, M.B.

(*Liverpool Medical and Surgical Reports*, October.)

After some introductory remarks on the variations observable under different conditions in the line of ascent, the apex, and the line of descent of the sphygmographic curves, and the conclusions that were capable of being fairly drawn from such variations, the author explained that in all the cases he should have to adduce the sphygmograph had been applied to the same (left) radial artery, and that two tracings were always made as closely as possible to each other, on the same glass—the one before, and the other after the application of the remedy—so as to admit of a ready comparison. The agents employed were the warm bath, alcohol, nitrate of amyl, ipecacuanha (to produce emesis), digitalis, aconite, chloral hydrate, belladonna, and veratrum viride.

The Warm Bath.—The entire body was immersed in a bath at 98° F., and the tracing taken almost immediately afterwards. A very striking change, affecting chiefly the apex and line of descent of the sphygmographic tracing, was observable. Before the bath the apex was much rounded—so rounded, indeed, that an almost horizontal line of some length connected the lines of ascent and descent, while the latter was nearly mathematically straight, the merest ripple occurring near its commencement. Immediately after entering the bath the apex became exceedingly sharp, the ascending and descending lines forming an angle of considerable acuteness, often not more than 45°, while the angle formed by the extension of the corresponding lines upwards under ordinary circumstances was never of less value than 90°. Besides this altera-

¹ Abstract of a Paper read at the Liverpool Medical Institution, Session 1870-71.

tion of the apex, the line of descent, instead of being straight, was broken by a deep notch, indicative of increased diastole. These alterations seemed to point to the following physiological effects of the warm bath—viz., a diminished resistance to the passage of the blood through the swollen arteries and capillaries without any great diminution of the force of the systole. The ascending line on the tracing was as high during the bath as before, showing that the force with which the left ventricle acted was, therefore, not much, if at all, diminished. The instantaneous descent of the lever on the conclusion of its ascent, and the obliteration of the previously existing horizontal line between its rise and fall, point clearly to the disappearance of a state of tension in the small arteries and capillaries which exactly balanced the force exerted in the latter part of the systole. The secondary curve indicated also diminished resistance.

Alcohol—in the form of whiskey punch (one ounce of Irish whiskey to two ounces of hot water)—produced a vertical line of ascent as the chief variation from the normal tracing. The left ventricle, therefore, under the stimulating influence of alcohol, acts quickly as well as strongly. There was no indication of diminished tension in the arterial system.

Nitrate of amyl was administered by inhalation, five drops having been placed on a cone of blotting-paper, which was held over the nose and mouth during the inspiration. Flushing of the face and a sense of fulness in the head immediately supervened, and concomitantly with these effects there were the following changes in the tracings: A much greater number of pulsations in a given time, the proportion being as 9 to 5; a short but oblique line of ascent; a rounded and an unbroken line of descent. From these indications it was concluded that the physiological effects of the drug, such as the sense of fulness, &c., depended probably upon an exactly opposite condition to that which was often stated to cause them, and that instead of capillary paralysis, and a consequent free passage of blood through the system, there was an undue amount of resistance, which, coupled with a very rapid and somewhat vigorous systole, kept the capillary system in a constant state of tension. It was remarked that the mere fact of increased frequency of the pulsations could not alone account for the entire absence of a secondary curve in the line of descent if there had been a condition of capillary paralysis, because in the pulse of typhus, in which this prevails, such a curve is always well pronounced, however rapidly the heart may act.

From the appearance of the tracings during the administration of digitalis, Dr. Carter was inclined to the opinion that this drug acted as a cardiac tonic, but he would not speak decidedly on this point till he had made further observations.

In the other tracings there was not sufficient change to call for special remark.

ART. 120.—*Short Notes on Drugs and Pharmaceutical Preparations of Recent Introduction.*

By JOHN ABRAHAM, President of the Chemists' Association.

(*Liverpool Medical and Surgical Reports*, October.)

The most noted medicine of recent introduction is *chloral hydrate*. Its use originating in Germany, its manufacture has been almost confined to that country. The exaggerated expectations with which it was heralded have not been realized, and its consumption, so far as Mr. Abraham's experience enables him to judge, is not nearly so extensive as it was formerly. It has been stated that an *alcoholate* has been fraudulently substituted for the *hydrate*, and that its properties are very different and very inferior. The two are distinguished by the relative amounts of chloroform which they are capable of yielding, which is considerably less in the case of the *alcoholate*. An alarm was excited which has been shown to be unfounded so far as it relates to this particular substitution, and it rather appears that the quality of the *chloral hydrate* in the market

in this country was remarkably uniform, differing mainly in the presence of a little more or less water, owing to its being somewhat hygroscopic. It has been suggested, however, that there may be present occasionally some unknown compounds of chlorine, which alter its properties, but the author believes that none such have yet been detected. It may be observed, that according to the experience of some observers, a very minute quantity of impurity may be expected to modify its action. This may be illustrated by the fact that there are in the market two chloroforms, one made from rectified spirit, the other from the mixture of rectified spirit with naphtha, known as methylated spirit. Mr. Abraham is not sure that it is possible by any ordinary means to distinguish between them, and he was told by one of the most eminent manufacturers that they could not distinguish one from the other; but he is assured that the use for anæsthetic purposes of the one made from impure spirit is more liable to be followed by sickness than the similar use of the other.

The general use of *phosphates* and *hypophosphites* is a noticeable feature of the pharmacy of the last ten years. Hypophosphites in solution in water pass into phosphates. Mr. Abraham doubts whether their preparation in the form of syrup preserves them.

Hypophosphite of lime is stable and may be administered as a powder, but it is not soluble in water.

Hypophosphite of soda is soluble, but should not be kept more than a few days in solution. The hypophosphites have not realized the sanguine expectations of their early advocates.

The *phosphates* and *syrups* of phosphates have come largely into use, but all or most of the latter decompose in keeping. The syrup of *phosphate of iron* of the Pharmacopœia is much in use. A syrup of *iron, quinine, and strychnine* (also called Professor Easton's tonic syrup) is a favorite. It contains phosphate of iron, with one grain phosph. quinine, and $\frac{1}{2}$ grain of strychnine, in each drachm, which forms a dose.

A compound syrup of phosphates, known as *Parrish's compound syrup of phosphates and chemical food*, is imported from the United States. It contains in one drachm about two and a half grains phosphate of lime, one grain phosphate of iron, with smaller quantities of soda and potassa.

To the syrup of phosphate of iron is sometimes added *phosphate of manganese*, half a grain to a drachm.

A feature of recent pharmacy is the use of *granulated effervescing preparations*. One of these has become wonderfully popular within a short time. It is known by the name of *effervescing citrate of magnesia*, although it does not usually contain any magnesia. The type of this preparation is the *sodæ citratæ effervescens* of the Pharmacopœia, which is a very elegant preparation. Some of the manufacturers of the popular preparation add sugar, and a larger proportion of acid, and obtain even a more palatable preparation. The same ingredients are also combined with a number of active medicines, of which those known as *effervescent carbonate of iron* and *effervescent carbonate of lithia* are the chief. Effervescent citrate of quinine and iron, citrate of bismuth and *peppine*, *bismuth, pepsine and steel*, *Vichy salt, citrate of potash, &c. &c.*, are also in use. With regard to these preparations, it should not, however, be assumed that the patient really takes carbonate of iron, carbonate of lithia, &c. The effervescence is produced by the reaction of tartaric and citric acids on bicarbonate of soda; but in the presence of these acids, it is not to be expected that the liberated carbonic gas should seize the iron, lithia, &c. The fact in question will be still more apparent when an attempt is made to produce an *effervescent iodide of iron*.

The waters of various natural springs have come into large demand. The chief of these are the *Vichy*, the *Friedrichshall*, and the *Vals*, of the foreign springs, and the *Harrogate* of our own country. The latter are divided into the *sulphureous* and the *chalybeate*, and the usual taste of iron solutions is completely masked in the latter by the introduction of carbonic acid. Of the other springs, those chiefly asked for are the *Pullna*, the *Carlsbad*, and the *Freemach*. The latter is concentrated into a *solution*, and also into a *salt* which is used in baths.

In connection with these may be mentioned *pepsine*, *pepsina porci*, *wine of pepsine*, and *liq. pepticus. præp.*; *pepsine* and *pepsina porci* are names used to signify an active principle combined in an uncertain proportion with starch. Both are in considerable favor.

The oil of theobroma (cacao butter) has been a valuable addition to pharmacy, especially for the exhibition of medicines by the rectum and vagina. Applications of this nature, which were almost unknown, as respects the latter organ, twenty or thirty years ago, are now greatly in demand, and the oil of theobroma is the medium generally preferred, on account of its firmness when cold, and its low melting point. But a mixture of gelatine, glycerine, and water, forming a soft elastic body, easily soluble in mucous secretions at the temperature of the body, is sometimes used, and will be found deserving of notice. The introduction of carbolic acid, pure, impure, and compounded, is a noticeable feature, the particulars of which are well known. The *sulpho-carbolates of zinc, soda, and potash* are used. The use of the articles called *marine lint, tenax, and carbolized tow* may be mentioned in this connection.

Bromide of potassium is in large demand, although chloral hydrate seemed on its introduction to be tried as a substitute. The *bromides of ammonium, iron, quinine, and sodium* are also in use. *Acetate of iron* in solution has a very agreeable taste. The official tincture is not found to keep, but the *etheral tincture of acetate of iron*, of the German Pharmacopœia, is a good preparation. The dose is twenty minims. *Rubini's tincture of camphor* is in popular demand. It is a strong spirit of camphor made by dissolving camphor in its own weight of alcohol (not spirits of wine).

Sulphurous acid, after having been much overpraised, is still in moderate demand. It varies much in strength, and is liable to change. A solution of *bisulphite of lime*, in which the sulphurous acid is loosely combined, which was introduced for the preservation of meat for food, has valuable applications corresponding to those of sulphurous acid. The *sulphites and bisulphites of soda* are analogous preparations, but they do not smell of sulphurous acid. A mixture of chloride of sodium and oxide of manganese, to which is added a dilute sulphuric acid, is used for the production of *chlorine fumigation* where a large quantity is wanted in an unoccupied apartment. Hydrochloric acid is added to oxide of manganese where a slower development is required, but this may be hastened by the application of heat.

Oxalate of cerium continues to be prescribed, and (largely) *carbonate of lithia*. The *resin of podophyllum* is in established demand.

A preparation called *Vin Diuretique d'Hôtel Dieu* is in use. It is composed of *squill, juniper berries, digitalis, and acetate of potash*, infused in white wine. The dose is half an ounce.

ART. 121.—On the Reduction of Temperature in Fever Patients by the Use of Ice-Pillows.

By W. LEUBE, M.D., Medical Superintendent of the Fortress of Ulm.

(*Deutsches Archiv für Klinische Medicin*, May; and *British and Foreign Medico-Chir. Review*, October.)

Dr. Leube has lately treated several cases of severe fever occurring among the French prisoners of war at Ulm, and in typhus he employed the cold bath, but this mode of treatment could be only partially adopted, because the patients strongly resisted it. Dr. Leube therefore determined to supersede the cold bath by another method of refrigeration, which would be no less effectual, but would be less troublesome to the patients. The application of ice-bags might be supposed likely to reduce the temperature, but it was found practically that when even two or three ice-bags were employed there was no remarkable diminution of the animal heat. He therefore endeavored to improve the apparatus for local refrigeration in two directions—viz., by extending the surface of the cooling medium, and, on the other hand, lowering the degree of cold—and these two objects Dr. Leube thinks he has effected by means of his "cold pillows," which

he describes. They consist of two large four-cornered pillows, which are filled with a freezing mixture consisting of ice and salt, a combination which he finds much preferable to any other freezing agent. The ice is introduced in a pounded state into the pillows, and common salt is afterwards added, and then the opening by which they were admitted is tightly closed. The pillows are placed lengthwise along the bed—one, which is the larger, for the legs, and the other for the back of the patient; then a caoutchouc covering is laid over the pillows, and afterwards an ordinary sheet. After these preparations the patient is laid on the "cold mattress," and two bands are placed across him, one over his legs, and the other over his navel, the objects of this arrangement being to keep the body close to the bedclothes, and to prevent the involuntary movements of the legs which sometimes occur during the treatment. Lastly, the counterpane and the blankets are laid over the body. The patient at first finds the coldness of the bedclothes very pleasant, and even afterwards the feeling is by no means so disagreeable as that experienced on entering into a cold bath. In four patients in whom Dr. Leube tried the effects of the cold pillows no opposition was manifested by them, although they lay on them from an hour to an hour and a half. In only one of the eight experiments made, the patient begged to have the cold mattress removed; and, on the other hand, some patients who had alternately tried cold baths and the ice-pillows, begged to be placed on the latter, instead of using the former. After the lapse of an hour or an hour and a half there was slight shivering, which result is to be expected from any effectual refrigerating process, and after this period Dr. Leube usually caused the pillows to be removed, not because they were disagreeable to the patient, or because uncomfortable symptoms presented themselves, but on account of theoretical considerations, which he afterwards specifies. The experiments hitherto made by Dr. Leube gave the uniform result that, in a bodily temperature of 40° C. and above, the treatment by the ice-pillows reduced the temperature in the rectum 1° to 2° in from one to two hours. Dr. Leube gives the particulars of the cases in which he tried this method of treatment; noting the temperature in each case, and also the pulse and the respiration, and other particulars, and he concludes his paper by observing that the ice-pillow may constitute a very useful apparatus for refrigeration, although he does not conceal his opinion that much improvement may be necessary in the application of the freezing mixture, the construction of the pillows, &c.

ART. 122.—*On the Influence of Alcoholism on Traumatic Lesions.*

By M. BÉHIER.

(*Archives Générales de Médecine*, January, February, and March; and *British and Foreign Medico-Chir. Review*, October.)

In a recent discussion on the influence of alcoholism on traumatic lesions at the Académie de Médecine, M. Béhier stated that this influence, in his opinion, was disastrous, and he adds that the same observation was applicable in the case of internal maladies. The influence in question was not to be regarded as an instance of poisoning, and independently of the acute symptoms of alcoholism the different morbid results observed in persons addicted to drink are to be referred to the changes produced by alcohol in the different organs of the body.

These changes are of different kinds, according to the period of the disease; and in order to estimate the influence which may be exercised by alcoholism on diseases and on wounds, different phases of alcoholism must be distinguished. At first, alcohol produces transient congestion, and hence it stimulates; at a more advanced stage it induces sclerosis of certain organs, the symptoms varying according to the organ attacked; as in the liver, signs of obstruction of the *vena portæ*; in the nervous centres, trembling, dulness of the senses, loss of memory, local paralysis; and at a still more advanced stage it induces fatty alteration of the tissues and steatosis of different organs. Sclerosis and steatosis present, according to M. Béhier, the important terms of the influence of alco-

holism, and these lesions constitute in the economy a condition of degradation which sensibly lessens the force of resistance to depression produced either by diseases or injuries. The alterations caused by prolonged alcoholism are very extensive, steatosis having been demonstrated in the glands of the stomach, in the liver, in the kidney, in the heart, and other muscles, and even in the blood. When disease or injury is superadded to these conditions, a series of symptoms is observed which cannot be referred either to ataxia or adynamia or to putrefaction, although the depression of the system is analogous to the last-named state. The question, however, may be asked, how can it be ascertained that the economy has arrived under the influence of alcohol in excess at the period of organic alterations just mentioned? M. Béhier considers the answer a difficult one, but he points to a coincidence which deserves notice, viz., an excess of fat in the areolar tissue, and he adduces two facts which seemed to be proved—1st, an excess of fat in the heart, the mesentery, and some other regions in persons addicted to alcohol; and 2d, the marked *embonpoint* of subjects in whom the serious symptoms in question are manifested when they suffer from disease or injury. Delirium tremens belongs, according to M. Béhier, to a different and less advanced stage of alcoholism.

Hence alcoholic preparations which are useful in cases where delirium tremens accompanies acute maladies are not advisable when it is necessary to treat symptoms arising from a state of general steatosis, the last being a true organic lesion in which therapeutic treatment of any kind is of very little avail.

M. Verneuil, in the same discussion, differs in opinion from M. Béhier in some respects, and he doubts whether the alcoholic diet is really the cause of the severe cerebral symptoms often observed after wounds, and he thinks that this cause is rather to be sought in the seat, the nature, or the stage of the injury, the cerebral functions being disturbed either directly by the situation of the wound, or by alterations of the blood (as by anæmia or by infection), or through the medium of the nervous system. He thinks that there is no specific remedy for delirium tremens, but that the treatment must be directed according to the conditions presented by the brain and the other organs. The agents which have succeeded best are alcohol and its derivatives, tonics, and stimulants in cases of infectious delirium; and opium, bromide of potassium, and chloral in delirium.

ART. 123.—*The Use of Alcohol.*

By N. S. DAVIS, M.D., of Chicago.

(*Chicago Medical Examiner.*)

In an interesting paper on the "Effect of Alcohol on the Human System," Dr. Davis says that the subjoined propositions appear to be fully established: 1st. Numerous chemical analyses of the blood and different tissues, by different experimenters, show that when alcoholic drinks are taken the alcohol enters the blood and permeates with it every part of the body. 2d. An equally reliable series of experiments has shown that the alcohol undergoes no chemical change in the system, but is eliminated through the excretory organs, more especially the lungs and kidneys, generally within a few hours after it is taken. This position has long been disputed, but it was finally fully established by the results of the well-devised and carefully executed experiments of Lallemand, Perrin, and Duroy. 3d. While the blood is circulating through the system, the alcohol diminishes the sensibility of the brain and nervous system, in the same manner as other anæsthetics, and also retards the active changes in all the tissues; and consequently diminishes the sum total of eliminations or excretions in a given period of time. The numerous and patient experimental investigations of Prout, Sandras, Bouchardet, Boker, Hammond, and others, have removed all doubts as to the truth of this proposition. 4th. By diminishing the atomic changes in the tissues of the body, and the sensibility of the nervous system, the alcohol by its presence also diminishes the temperature, the strength, and the power of endurance. That its presence in the system re-

duces the temperature, was fully established by the results of a series of experiments performed by himself in 1850, some of which were repeated in 1867. These experiments consisted in testing the actual temperature of the body every half-hour, with a delicately graduated thermometer, for three hours after a moderate drink of alcoholic liquor. The tests were applied to both wine and whiskey. These results are confirmed by the observations of Magnus and others in Europe.

He is compelled to designate alcoholic drinks as anæsthetic and sedative—anæsthetic to the nervous system, and sedative to the properties of the tissues. As such, they are capable of being used to fill a limited number of indications in the treatment of diseases. And yet there are other well-known agents in the *materia medica* that will meet the same indications equally well, or even better. So true does he deem this assertion, that for twenty years he has not prescribed for internal use the amount of one pint of alcoholic drinks annually, including both hospital and private practice.

ART. 124.—*The Electric Bath in Mercurial Trembling and in Alcoholic Tremor.*

By M. CAMILLE CHAPOT-DUVERT.

(*Bulletin Générale de Thérapeutique*, June 15.)

This bath consists of a pair of Bunsen's elements of medium size, and a coil of one large wire connected with a copper regulator, which augments and diminishes the force of the apparatus by covering or uncovering a smaller portion of the coil, which serves to interrupt the current by means of a vibrator. At each interruption the *extra current* disperses itself through the water. The sensitive pole, formed of a large fragment of charcoal, corresponds to the pedal, and the negative, formed of a plate of zinc, to the cephalic extremity. Mercurial tremor, M. Chapot-Duvert remarks, is one of the most frequent manifestations of mercurial intoxication. Without causing any apprehension in respect to the life of the sufferer, it is a troublesome symptom for the workman who is obliged to gain his livelihood by the labor of his hands. The progress of the disease is slow, and it recurs frequently if the individual be exposed anew to the original cause of the affection. The measures usually employed consist in sudorifics, vapor and sulphur baths. Opium has also been recommended, but the treatment has always been excessively protracted and has often proved unsuccessful.

No observations have hitherto been made on this subject, except that M. Axenfield, in 1870, remarked that electric baths might prove of service, especially in mercurial poisoning, by aiding the elimination of the metal. M. Chapot-Duvert proceeds to relate the histories of five cases, in all of which good results were obtained by the application of this novel method of treatment. The following is a *résumé* of one of them: A mirror-maker, aged twenty-six, applied on the 12th of January, 1870, at the Hôpital St. Louis; brought up as an agriculturist, he had been five years at the trade; soon after commencing to work at it he had the usual symptoms of mercurialism, but these were removed by treatment, and he remained well for two years. He then suffered a relapse, and was again cured. He was abstemious in regard to drink, and went on tolerably well to December, 1869. Then debility was experienced, followed by gradually increasing tremor, for the relief of which he applied. The trembling was marked in both pairs of extremities, sensibility was intact, the muscular force was considerable. He was placed in the electric bath, and remained in it for twenty minutes, and this was repeated daily for seven days. Great improvement in the power of walking was experienced, and he could use his right hand to eat with. After twelve days' baths the improvement was still more marked; he could run with facility and walk with an assured step, though on his admission he was so weak he could scarcely stand upright. After twenty baths he was perfectly well. M. Chapot-Duvert states that he has

had equal success with the remedy in cases of alcoholic tremor. He was unable to discover that any traces of the metal in the former cases were discharged either by the urine or on the zinc plate.

ART. 125.—*On Cow's Milk Koumiss*.¹

By VICTOR JAGIELSKI, M.D.

(*The Lancet*, August 19.)

Dr. Jagielski said that koumiss is a pure animal milk in a state of fermentation. In its composition it combines all the requirements for a wholesome nutrition of the human body; while certain products of the fermentation add to it important therapeutic properties. All animal milks are convertible into koumiss, and the general qualitative composition of the products is the same for all. In all, the act of fermentation sets free the casein, albumen, and butter in a highly attenuated form, and develops alcohol, and carbonic and lactic acids, together, according to Morfit, with certain fragrant volatile compounds. Once started, it continues until all the lactose of the milk has been transformed, and this transmutation is more rapid in proportion to the rise in the temperature of the air. Dr. Jagielski distinguishes the three gradations thus formed according to their respective physiological effects; but though each may have a specific application, the general properties are retained by all. No. 1. This is the freshly-made koumiss, with the minimum of the products of fermentation. In three to five days it becomes No. 2, which is more acidulous than sweet, and so sparkling that it requires to be drawn from the bottle through a tap. In ten to fifteen days it has changed into No. 3, when the fermentation is more developed than in No. 2, and extends to the maximum with time. Consequently the taste is acid, and the koumiss rushes through the tap as a rich, creamy, foaming liquor. After quoting many distinguished European and American authorities in its favor, the author noted some of the favorable results of his own professional experience with the use of koumiss in cases of constipation, impaired digestion, debility, chronic bronchitis, consumption, diarrhoea, in the adynamic stage of febrile diseases, after confinements, operations, in diabetes, &c. In conclusion, he urged a thorough trial of it both in hospital and private practice, believing that, though it is not specific for any disease, it merits the most serious consideration as a most benign medicinal agent.

ART. 126.—*Obstinate Ascites treated successfully by Elaterium*.

By CHARLES MURCHISON, M.D., F.R.S., Physician to St. Thomas's Hospital.

(*British Medical Journal*, November 11.)

The patient, a careworn but temperate man, had been admitted into St. Thomas's Hospital with all the symptoms of portal obstruction, the cause of which appeared to be somewhat obscure. It was uncertain whether the ascites was due to cirrhosis of the liver or malignant disease, but it was most probably the latter. From the large amount of fluid which was present in the abdomen, it was found impossible to make out accurately the size of the liver; but, so far as the examination went, this organ appeared to be enlarged, and this enlargement, as well as the tenderness over this region which had been present from the day of admission, was on the increase. He was treated, in the first place, with a pill containing squill, digitalis, and blue pill, under which the ascites increased. He was then ordered iron and digitalis, and afterwards copaiba for a week, but with no better result. Elaterium was prescribed on two occasions during the following week, the copaiba being continued; and the

¹ Abstract of a Paper read at the Thirty-ninth Annual Meeting of the British Medical Association.

result was that the circumference of the abdomen at once diminished from thirty-six to thirty-three inches, and his breathing was greatly relieved. The patient had not been ordered the purgative previously, as he had at first been suffering from diarrhœa; and Dr. Murchison remarked that the elaterium could not safely be repeated frequently, because of the weakening effect on the patient. He would now return to the iron and digitalis, and would repeat the elaterium occasionally, if the ascites increased.

ART. 127.—*On the Therapeutical Uses of some of the Plants of Canada.*

By A. A. HENDERSON, M.D.

(*Canada Medical Journal*, March.)

Among the plants of Canada which appear to possess medicinal virtues are a kind of *Boletus*, or mushroom, growing on the American larch, a kind of *Lycopodium*, and the Canadian mallow. The first, which is a fungus, and is known in Canada by the name of the pine-apple or bitter-apple, grows on the trunk of the larch, and dies when the tree dies; but when obtained from the green tree it shows every sign of life. According to the observations of Dr. Henderson, this fungus acts as a tonic and an emmenagogue, and imparts a bitter taste to the tongue, and increases the flow of saliva. It appears to have been employed with success in Canada by persons who wish to overcome the habitual use of tobacco; for the fungus causes the tobacco to have such a disgusting taste that the habit of tobacco-smoking is thereby discontinued. As a tonic it is employed as a native remedy, steeped in alcohol, and is considered stomachic, and is largely used for this purpose in Upper Ottawa. As a remedy in amenorrhœa it has long been known in Canada, but the fact has been confined to the knowledge of a few persons, chiefly old women, who kept its virtues secret in order to derive profit from its medicinal use. Dr. Henderson, however, gives some cases in which he knows that it has been successfully employed in this complaint. It is given in the form of powder, taken in milk or water. *Lycopodium* has been found efficacious in derangement of the heart's action, produced by weakness or irritability of the nervous system, and its effect is said to be instantaneous, a feeling of quiet and comfort being produced. The Canadian mallow appears to have been usefully employed as a means of reducing abnormal muscular contractility, or, in other words, as a local application in certain forms of rheumatism, the result of cold and wet, where the flexor muscles of the limbs become contracted and painful.

ART. 128.—*On the Estimation of Atmospheric Ozone by Means of Aspirators and Acids.*

By CORNELIUS B. FOX, M.D.

(*The Lancet*, August 12.)

At the thirty-ninth annual meeting of the British Medical Association, at Plymouth, Dr. Fox read a paper on the above subject.

The author, having pointed out the great importance of estimating correctly the amount of ozone present in the air, if we would ascertain with certainty whether or not an excess or deficiency of this allotropic modification of oxygen is in any way connected with disease, proceeded to comment on the chaotic and inexplicable condition in which all ozone records are involved. The mode of estimating ozone which has been hitherto generally adopted appears to be liable to the following sources of error: I. Impurity of chemicals employed. II. Impurity of paper employed. III. Ozonometers faulty in construction. IV. Formation of the iodate of potash. V. Bleaching and fading of the colored tests. (1) From formation of the iodate of potash; (2) from presence of true antozone in the air; (3) from volatilization of the iodine set free, in consequence of (a) a rapid current of air, (b) an excess of moisture in the air, (c) a high

temperature. VI. Changes in the force of the wind. Brodie and others consider Schönbein's antozone to be a myth, whilst some German savants have recently proved that it is simply the binoxide of hydrogen. Dr. C. Fox believes in the existence of an antithetical state of the air, and describes both the atmospheric conditions under which it occurs and its effect. This principle he names *true antozone*, to distinguish it from Schönbein's antozone, with which it has hitherto been erroneously identified. The various errors above enumerated, of which the formation of the iodate of potash is one of the greatest, are then shown to be easily obviated. This colorless salt, into which much of the iodine set free by the ozone is often converted, he decomposed by the application to the tests of tartaric acid in the form of spray, so that the whole of the metalloid may be estimated. The error arising from the changes in the force of the wind is also avoided by the use of aspirators, by means of which a certain amount of air is made to pass over the tests at a certain velocity. The two forms of aspirators which have been employed for this purpose having been adverted to, a third kind, of an improved construction, which has been devised and employed by Dr. C. Fox, was then described.

ART. 129.—*On Quinine, Quinodine, and Cinchonine.*

By J. B. HAMILTON, M.D.

(*Indian Medical Gazette*, March 1.)

Dr. Hamilton gives the result obtained from the use of quinine, quinodine, and cinchonine, as prophylactics against malarial fevers. He divided the troops under his care into three parts, each part to receive but one of these alkaloids. Every man took three grains of quinine, quinodine, or cinchonine, as the case might be, and such cases of malarial fever as were developed were treated with the same alkaloid as he had been taking as a prophylactic. After giving the results of the trial, Dr. Hamilton concludes:—

"From the above facts it would appear that quinodine ranks highest as a prophylactic, as the men treated with it show only 7.7 per cent. of admissions.

"Quinine ranks next, giving 8.7 per cent., and cinchonine undoubtedly last, showing 19.4 per cent. of admissions.

"It must also be borne in mind that these men were all under exactly the same conditions, as to residence, food, clothing, exposure, night duty—in fact, three bodies of men more evenly situated in every way could not be found.

"Now as regards the immediate action of the drugs, an undoubtedly tonic effect was produced by all.

"The action of quinine is so well understood, that it would be superfluous to touch on it.

"Quinodine seems to act nearly in every way in a similar manner to quinine, and the cases treated with it in the ordinary way yielded as readily to the equivalent doses as they would have done if treated with quinine.

"Some complaints were made of diarrhoea having been caused by it, but on investigating them I came to the conclusion that they were all due to other causes, chiefly climatic, and that, on the contrary, the number of admissions from diarrhoea was very low, being only three for the months the drug was being given in the whole battery.

"Cinchonine did not give such favorable results; no doubt it has a certain amount of tonic, prophylactic, and antiperiodic power, but it was less efficacious and certain in its effects, requiring larger doses than either of the others; the paroxysms of fever returned oftener, and in many cases I had to omit it and finish the cure with ordinary doses of quinine.

"In conclusion, I beg to express my opinion, founded on the experience of five rainy seasons—two at Jubbulpore, two at Hazareebagh, and one at Allahabad—of the great benefit accruing from the use of quinine (or its allied drugs), issued as a prophylactic during the months of August, September, October, and of a late wet season, November; the cases of ague are fewer, of a milder type, yield more readily to treatment, and seldom assume the remittent form."

ART. 130.—*Experiments on Santonin.*

By ROBERT FARQUHARSON, M.D. Edin.; late Medical Officer to Rugby School, &c.

(*British Medical Journal*, October 21.)

About two years ago Dr. Farquharson was consulted in the case of a little boy on whom a great variety of treatment had been unsuccessfully applied for the removal of thread-worms. Five grains of santonin were ordered at bedtime; and on Dr. Farquharson's next visit he found the whole establishment in consternation at the effect of the remedy, which had caused a very copious and involuntary discharge of urine towards early morning. Such an accident was naturally most distressing to a boy of twelve, and pupil in a large private school; and more particularly so as no consolation was afforded by any beneficial action on the disease for which the drug was prescribed.

Shortly afterwards Dr. Farquharson instituted a series of experiments on himself, with the following results:—

"1. *Effect on Vision.*—Twenty minutes after swallowing five grains, I observed flames to assume a decidedly yellow color, as though spirits were being burnt. Ordinary white gas-globes became deeply tinted with yellowish-green, and writing-paper presented the same phenomena in somewhat less marked degree. During three hours the tints gradually increased, after which they faded by slow stages, until vision was restored to its normal standard.

"The precise conditions under which these singular results take place, and the exact alterations of color observed, have been submitted to most exhaustive study by a German physiologist, whose name I cannot now recall. Post-mortem examination proves that a true staining of the retina is rapidly produced, but it is not probable that this can be detected during life by the ophthalmoscope. This opinion I base on the authority of an eminent oculist, and on the fact that in the somewhat parallel group of cases where yellow vision attends jaundice, I have been unable to discover any unnatural appearance on careful inspection of the fundus of the eye.

"2. *Effects on the Urinary Organs.*—Five grains were taken at bedtime, and next morning an irresistible and almost uncontrollable desire to micturate was felt, the act being attended with some irritation and smarting. The urine was of a deep saffron yellow, staining the pot and linen precisely as bile. It was of specific gravity 1028. The quantity was decidedly increased, and the urea was somewhat in excess. The diuretic action continued during the day; and it was not until eight o'clock P. M. that the secretion was quite free from foreign pigment.

"3. *Effects on the Digestive Organs and General Symptoms.*—Nausea and dryness of tongue were generally present; and on one occasion, after a ten-grain dose, well-marked tenesmus was experienced both by myself and by a friend who shared the experiment. After five grains sleep was generally disturbed, and I usually woke unrefreshed, with sickness, frontal headache, and deficient appetite. But the best marked symptom, and one which I have not hitherto seen described, was a feeling of profound and most unusual depression, accompanied by so much irresolution and want of confidence in my own powers, as to render me quite unfit for work of any kind. This invariably followed even a single five-grain dose; and beginning with dulness and heaviness, ran on into very much that sort of melancholia which I imagine jaundice sometimes produces. This denotes an effect on the nervous system which ought not to be overlooked; and should further investigation prove its occurrence to be constant, and not to depend on any peculiar idiosyncrasy of my own, we may yet find in santonin an agent of some value in the almost unexplored regions of mental therapeutics."

ART. 131.—*Santonin as a Parasiticide.*

By DAVID PAGE, M.B. Edin.

(British Medical Journal, Sept. 16.)

Dr. Page states that some time ago the efficacy of santonin in destroying intestinal parasites, and the peculiarity of its effects on the system, now and again observed, received a passing notice in the *British Medical Journal*. He wishes to add a remark or two in the same direction, furnished by cases lately under his observation.

In the first of these, a healthy-looking girl, aged twelve, was brought to him suffering from loss of appetite, toothache, white-furred tongue, and symptoms generally indicating an irritable state of the *primæ viæ*. Her mother stated that for some weeks the navel had been the seat of great pain and uneasiness, and there were now much redness and tenderness to touch. The failure of domestic medicine had alarmed her, and induced her to seek a remedy elsewhere. Dr. Page suspected, from the above symptoms, that the *ascaris lumbricoides* was lurking within the small intestines, and so gave her five-grain doses of santonin, to be taken at bedtime, followed next morning by eight grains of the compound scammony powder, to be taken early before breakfast. This treatment was to be repeated for three successive nights; but on the morning after the second dose he was informed that two round worms had come away by stool. One of these was found to measure fourteen inches in length. A week later the medicine was repeated, but without any result, and the girl had already recovered her former good spirits and appetite. In spite of the large quantity of santonin administered, there was no disturbance of the eye-sight or other function.

In the second case, occurring in a boy, the immediate effect of the treatment was to dislodge a whole colony of the oxyuris, or threadworm, with masses of jelly-like mucus. After the first dose much alarm was excited when it was discovered that the little patient had involuntarily passed during sleep a large quantity of urine, which stained the bed-linen bright yellow. This, Dr. Page had to explain, was one of the occasional effects of santonin.

ART. 132.—*On Ether and Chloroform as Anæsthetics.*¹

By J. WARRINGTON HAWARD, F.R.C.S.

(British Medical Journal, November 4.)

The paper commenced by stating that, it having been suggested to the author that the statements of Dr. Bigelow and other American surgeons showed that ether as an anæsthetic had been to our detriment neglected, he had during the past year practically investigated the subject, and had arrived at the conclusion that ether was, for several reasons, to be preferred to chloroform. Of these reasons, the strongest was the greater safety of ether; for by using it the chief, and in skilled hands probably the only, cause of fatal cases of chloroform-inhalation was excluded—i.e., paralysis of the heart; ether being a stimulant to the heart's action, and uniformly improving the pulse. The second was that ether, from its stimulant quality, was antagonistic to the effects of the shock of an operation, which the author maintained, and quoted cases to show, was not abolished by rendering the patient insensible. A third was the greater liability of chloroform than ether to produce after-sickness. The principles and mode of administering ether were then described, and it was shown that if these were attended to, the production of anæsthesia by ether was as easy and certain as by chloroform, and required but little more expenditure of time or the drug. The only cases to which ether was not so applicable were operations upon

¹ Paper read at a Meeting of the Royal Medical and Chirurgical Society, October 24.

the mouth, in which an inhaler could not be used, and where it was necessary to readminister the anæsthetic as rapidly as possible without an inhaler. There were two appendices to the paper: the first consisting of a table of fatal cases of chloroform; the second, of a table of ninety-seven cases in which the author had administered ether, including amputations, excisions, perineal section, lithotomy, lithotripsy, staphylophary, operations on vesico-vaginal fistulæ, ligature of piles, and other operations. Especial note was taken of the occurrence of after-sickness, and the only approach to it was that in one case, after an operation for recto-vesical fistula, the patient vomited once, an hour after the operation.

ART. 133.—On the Physiological Action of Saline Purgatives.¹

By ARMAND MOREAU, M.D.

The author shows by the results of experiments made on animals that saline purgatives, including sulphate of magnesia, really act in the manner acknowledged by the majority of physicians at the present day—that is to say, by exciting in the intestine an afflux of liquid; and not by producing simply and purely peristaltic actions of the intestinal tube, as has been supposed by some German authors.

ART. 134.—Chemical and Physiological Researches upon the Nature of Senna.

By MM. BOURGOIN and E. BOUCHUT.

(*Pharmaceutical Journal*, September 16.)

From the facts mentioned in an elaborate memoir by MM. Bourgoïn and Bouchut, it appears that senna cannot be classed with the plants that possess but a single purgative principle. It is evident, they say, that to this circumstance must be attributed the difficulties that have hitherto been experienced in the analysis of this substance, and the uncertainty which exists still in science concerning the nature of its active principle. It has been clearly shown that no single one of the constituent principles of the plant, taken by itself, can pretend to represent the whole of its general properties. In other words, besides chrysophanic acid, which only exists in small quantity, senna contains at least two other purgative principles; one represented by cathartic acid; the other contained in the preparation of Lassaigue and Feneulle, improperly called cathartine. This conclusion is evident, as the authors have satisfied themselves that cathartine contains no trace of cathartic acid.

As a general result of this inquiry, it appears that the best preparation of senna is the infusion, with or without the mucilaginous matter—such as the liquid extract, for example—since only such a preparation contains all the purgative principles of the plant.

ART. 135.—On the Therapeutic Actions and Uses of Turpentine.

By WARBURTON BEGBIE, M.D.

(*British Medical Journal*, September 2.)

At a meeting of the Medico-Chirurgical Society of Edinburgh, Dr. Warburton Begbie read a paper on the Therapeutic Actions and Uses of Turpentine. He gave a brief sketch of the ancient history of the drug from the time of Hippocrates, with a notice of the various forms in which the oleo-resins of the coniferæ are used or have been used in therapeutics. Oil of turpentine was described as being irritant and stimulant, quickening the circulation and aug-

¹ Communicated to the Académie de Médecine, Paris.

menting the temperature of the body. In large doses it produces a sort of intoxication; in drachm doses it is hypnotic. Externally it is a valuable rubefacient, and is absorbed by the skin so as very soon to be recognized in the breath, and by its characteristic violaceous odor in the urine. The production of this violaceous odor in its perfection seems to be a test of the integrity of the urinary organs, as it is less marked or absent in disease of the kidneys. The therapeutic actions and uses of turpentine are various. 1. As a cathartic it is uncertain, but along with castor oil it is useful in cases of obstinate obstruction and tympanitis. 2. As an anthelmintic it is chiefly used as a cure for tapeworm; also, in the form of enema, it destroys ascarides and lumbrici. 3. Though turpentine sometimes causes hæmaturia, it cures certain passive hemorrhages. It is useful in purpura, probably acting through the nervous system; and is useful also in hæmoptysis, hæmaturia, and uterine hemorrhages. 4. As a stimulant, it is especially valuable in adynamic fevers; as in the stupor of typhus, in certain kinds of delirium, and in the later stages of enteric fever with a dry tongue. 5. In certain nervous diseases, such as epilepsy and chorea, it is said to be very useful; but in epilepsy it is supplanted by bromide of potassium, and in chorea by arsenic. In certain forms of sciatica and crural or brachial neuralgia in the aged, twenty-minim doses thrice daily have a very good effect. In the nervous headache of delicate females, and the headache which is induced by fatigue, it is a better stimulant even than strong tea, and without the effect which tea so often has of banishing sleep. 6. In all chronic discharges from mucous membranes, such as chronic and fetid bronchitis, it is very useful, and is even advantageous in gangrene of the lung in checking the fetor. Under this head some interesting cases were given of gangrene of lung depending on the presence of foreign bodies.

ART. 136.—*On Disinfectants.*

By A. J. BERNAYS, Lecturer on Chemistry at St. Thomas's Hospital.

(*The Times*, September 21.)

"In employing a disinfectant," Dr. Bernays writes, "it should be borne in mind that we sometimes have to deal with bodies in a state of decomposition, evolving gases more or less known to chemists; at other times with matters not so advanced, in a solid state, but not volatile.

"The gases evolved from putrefying animal matter, and those of most injurious quality, are generally hydrogen compounds. Now these should be dealt with by volatile disinfectants; if possible, by gases. Now there is no gas to equal chlorine; there is none so cheap, so thoroughly effective in altering the character for good of noxious gases, and none so easy of application. As long as it is in excess, or, in other words, preponderates over the injurious hydrogen compounds, it can be recognized by its odor. There is only one serious objection to chlorine—its smell; but if it be properly used, and not wasted, this objection is reduced to a minimum. Except in the case of closets, where it is best to dust a small quantity in the pan above the reach of water, a solution of the chloride of lime, in the proportion of one pound to ten pounds of water, is most adapted for disinfecting air. A rag as large as an ordinary handkerchief, steeped in such a solution, wrung out, and suspended in small rooms, will sweeten the air for twenty-four hours. The chlorine, slowly evolved, acts partly in decomposing injurious hydrogen compounds, partly in evolving ozone; chlorine is therefore a grand oxidizing agent.

"I will not occupy your space by mentioning other gases, such as sulphurous and nitrous acids, but would only venture to point out that chloralum cannot be substituted for chlorine; a fixed, non-volatile substance cannot take the place as a disinfectant of volatile substances. When we come to disinfect decomposable matter, when it is our task to prevent such matter from decomposing, then we have generally to do with solid bodies. Here is my difficulty. How can I in a few words give an intelligible description? The compounds so capable of mischief are those which contain nitrogen, sulphur, and phosphorus; the

best type of them we have in albumen, such as constitutes in a pure state white of egg. These albumen-like compounds form doubtless the germs about which so much is written by medical men. If, then, germs partake of the character of albuminoid bodies, for such there can be no better disinfectant than carbolic acid. Anyhow, as these bodies give rise to the most fetid gases, as they are abundantly present in all decomposing animal matters, and as they are completely coagulated by carbolic acid, it is very difficult to understand why carbolic acid is to be substituted by disinfectants which have no such power. The evil of carbolic acid is not in its poisonous nature; many more have been killed by chloride of zinc, which is nearly equal to chloralum. No, rather is it to be sought in the deceptive character of common carbolic acid. The impurities give the disagreeable and often disgusting smell, and the odors attaching may give quite a false notion of security. Sprinkled against bricks in a sewer, out of reach of water, all the smell supposed to proceed from carbolic acid may continue to be evolved for months, whereas nothing in the way of disinfection is being accomplished. A purer article at a much higher price would be really cheaper, because effective.

"In conclusion, carbolic acid is readily diffused through air; chloralum is not. Both are good in their place, but the latter can no more pretend to take the place of carbolic acid than carbolic acid that of chloralum. Carbolic acid may coagulate germs and render them harmless; chloralum could do nothing of the kind."

ART. 137.—*On a Modification of Iridectomy Forceps.*

By R. LIEBREICH, M.D., Ophthalmic Surgeon at St. Thomas's Hospital.

(*Archives of Ophthalmology and Otology*, vol. i. No. 1, New York, 1869.)

In those cases in which the iris is tightly stretched by firm adhesions of its pupillary margin or its whole posterior surface, and particularly when its tissue is notably degenerated, the blades of the ordinary iris forceps glide over its surface without forming a fold, and the teeth catch nothing at all, or only in the moment of closing the forceps seize a single point of the membrane. Instead of bringing a part of the iris to the wound, only a little piece of the membrane is plucked off. For such cases Dr. Liebreich has had the situation of the teeth of the forceps altered in such a manner that the surface in which they grasp is turned to a right angle. The teeth, indeed, are at the front end, but not, as in the common forceps, in a surface perpendicular to the longitudinal axis, but they are concealed in the convex border of the branches at their front end, so that when the blades lie parallel upon the iris they have the same situation as the teeth of the fixation forceps—in the perpendicular or vertical position of the latter. The teeth in this manner come into action not only by the closing, but also by the application, of the open forceps, and bringing, according as they are more or less widely opened, two more or less distant points of the iris together. The difference in the manner in which the forceps take hold in the difficult cases spoken of, is very great. Besides for the iris, Dr. Liebreich says, they have done him good service also in the extraction of adherent secondary cataracts.

In reference to the manufacture of the instrument, it needs to be mentioned that the teeth, above all things, must on no account project beyond the border of the blades; the forceps must pass as smoothly through the corneal wound as the common iris forceps.

PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

ART. 138.—*On the Removal of Tumors from Bones.*¹

By Sir JAMES PAGET, Bart., D.C.L., F.R.S., Sergeant-Surgeon to H.M. the Queen; Consulting Surgeon to St. Bartholomew's Hospital, &c.

(*Medical Press and Circular*, June 28.)

The design of the paper was to show the propriety of removing the majority of non-malignant tumors growing in bones by simple extirpation or enucleation, rather than by resection of the bones or by amputation. It was shown that these tumors are as separate from the proper tissue of the bones as are fatty and most other innocent tumors from the connective tissue or other structures in which they grow; and that the same rules of operation are applicable to the one as to the other set of tumors. Cases were given of successful enucleation of fibrous, myeloid, cartilaginous, and osseous tumors, and some rules were stated for the diagnosis of malignant from innocent tumors in bones, and of those which grow within from those which grow without the bones.

Mr. Fairlie Clarke reminded the meeting of two cases in Sym's *Observations*, in which the latter showed a very material advance on the former. In the one, amputation had been performed, in the other excision of a portion of bone merely; but here we had a still greater advance.

Mr. Birkett said the paper did not afford much room for discussion, being merely a statement of facts. It had been the practice at Guy's for years to remove all innocent tumors from bone before having recourse to amputation. This was especially the case with tumors of the lower jaw. In a case under Mr. Poland, that gentleman removed such a tumor by enucleation, which completely cured it. In another instance a tumor, probably fibro-plastic, was enucleated, but perhaps imperfectly, for it returned, and amputation was had recourse to, after which there was no return of the growth.

Mr. T. Smith had a case in which he operated thus, depending on Sir J. Paget's judgment, as he would have preferred to amputate. The patient was a young woman, who suffered from pain and swelling of the upper part of the humerus. On examination a pulsating tumor was seen, but there was no glandular enlargement. Sir J. Paget recommended enucleation, and it was had recourse to, but not perhaps very effectually, as the incision was too small. After the operation she did fairly well for a year, when a protrusion from the cavity of the bone was detected and removed. Unfortunately she died of pleuro-pneumonia.

Mr. Savory considered the most important point in such cases was the diagnosis of the nature of the tumor. So in Mr. Smith's case he considered the question was whether the tumor was malignant or innocent. He considered it recurrent, and therefore advocated amputation. In cases where tubercle was deposited in bone, he thought it might often with advantage be removed by scooping.

Sir J. Paget desired to leave the operation to the test of experience. His design was merely to enforce that which was admitted by many, though under a kind of protest. The alternative he considered to be resection rather than amputation. But even that was accompanied with much inevitable damage to the limb; consequently enucleation was, where possible, to be preferred.

¹ Abstract of a Paper read at a Meeting of the Royal Medical and Chirurgical Society, June 13.

ART. 139.—*Drainage in Gunshot Wounds.*

By Dr. CHRISTOT.

(Medical Times and Gazette, Sept. 2.)

Dr. Christot has recently published, in the *Lyon Medical*, a series of interesting papers on "Drainage in Gunshot Wounds," in which he illustrates by many detailed cases the great utility of this means under very unpromising circumstances. His general conclusions are: 1. Drainage constitutes a valuable surgical procedure for warding off the accidents which ensue in gunshot wounds of the soft parts. It furnishes favorable results in those muscular and aponeurotic seton-wounds which are too often complicated by diffuse inflammation and extensive suppuration. By reason of the facilities which it affords for the discharge of pus and all kinds of septic liquors, it constitutes an excellent means of arresting traumatic fever, and of preventing or causing the disappearance of the accidents of septicæmia. Its application seems to be especially necessary in those cases in which the inflammatory action has been induced by the prolonged presence of foreign bodies amidst the tissues, such as projectiles, shreds of clothing, splinters, &c. 2. By the rapid limitation of the extent of the inflammation which drainage puts into force, it acts efficaciously in cases of diffuse suppurative peri-arthritis by protecting the endangered joint. In such cases it should be resorted to as speedily as possible. This indeed is one of the most important cases in which it can be employed. 3. In those cases in which gunshot wounds extend more deeply, and in which the bones or joints are implicated, drainage should be employed with more reserve. It would seem to be insufficient to meet the formidable accidents of traumatic arthritis, and it is scarcely more efficacious in the cases in which the diaphyses of the bones are concerned. It is perhaps more hurtful than useful wherever the injury implicates a medullary cavity of the first rank (as in the diaphyses of the femur, humerus, and tibia), for the elastic tube which is so well borne by the soft parts becomes an agent of irritation all the more dangerous, as in the osseous system the phenomena of inflammation or absorption present special conditions which only explain too well the serious general complications that result. Drainage resumes all its efficacy in injuries of the skeleton of the extremities (as in the hands and feet, wrist, and instep), whatever may be their extent or multiplicity.

ART. 140.—*Abstract of Clinical Lecture on Acute Abscess; Sinuses.*¹

By CHARLES F. MAUNDER, M.R.C.S., Surgeon to the London Hospital.

(Medical Times and Gazette, Sept. 23.)

Mr. Maunder observes that though such cases may at first sight appear of trifling importance, yet since they are of common occurrence they are worthy of study. He defines an abscess as a circumscribed inflammatory swelling containing pus; and conceives that its production is due to irritation of a part occasioning great congestion, and with this effusion of inflammatory lymph, which after the lapse of a few days is partially absorbed and partially degenerates into pus.

Treatment of this Superficial Abscess.—If the pain be not great, and the constitutional disturbance *nil*, the application of a hot poultice will suffice; and this will relieve pain and promote "pointing." By "pointing" is meant a tendency on the part of the abscess to discharge itself; and this it does by what is termed "progressive absorption," all the structures between the pus and the surface being disposed of with the exception of the cuticle. This latter having desquamated, the abscess has opened spontaneously. But there are circumstances under which it is not desirable to leave the case to nature, as

¹ Delivered January 26, 1871.

when there is much constitutional disturbance; when it is situated on the neck or face, especially of the female, whom it is desirable to disfigure as little as possible. In such cases a small incision should be made, and if the abscess be seated on the cheek, it should be punctured within the mouth.

If the abscess be situated beneath a deep fascia, it should be opened early, the most dependent part being selected.

Sinuses are frequent sequelæ of abscesses, and various methods may be employed—such as the careful dressing by means of compress, strapping, and bandage, so as to keep the walls of the sinus in contact, and thus prevent accumulation of pus; the injection of stimulating lotions, as the nitric acid, the carbolic acid, the iodine, &c., and simple slitting; but the radical and most expeditious means of cure is to slit them up on a director, and then to carry the incision at either end of the sinus some half inch into the sound structures, to form a channel for the ready flow of any future secretion, and to prevent bagging at the extremities. Then, with a pair of scissors curved on the flat, Mr. Maunder cuts away to a level with the healthy skin the thinned and overhanging integuments of either side. In this way an open and almost level wound is obtained, which soon heals by cicatrization. The scissors should be used when the sinuses appear to run close under or in the substance of the skin itself, rather than deeply in the subcutaneous tissue. The roof of the sinus will be found to be very thin, and when slit up each half will have a tendency to curl, and so, if left, to form two sinuses instead of the original one. Sinuses connected with strumous glands of the neck may often be cured by this method of treatment.

ART. 141.—On the Treatment of Syphilis by Hypodermic Injections of Corrosive Sublimata.

By R. W. TAYLOR, M.D.

(*New York Medical Gazette*, May.)

Dr. Taylor's observations on the treatment of syphilis by injections of corrosive sublimate extend over a period of eighteen months, and were conducted upon about fifty patients, male and female. He adopted this plan of treatment in the various lesions of the whole secondary period of the disease, and he divided the patients into classes. First, those who had not taken mercury in any form; and second, those who had previously been treated by mercury by the mouth or by inunction. In syphilitic roseola the eruption often disappeared rapidly under the use of the injections, and coexisting symptoms, such as rheumatoid pains and cephalalgia, were relieved at the same time.

Dr. Taylor thinks that the exanthem disappears much more rapidly by mercurial injections than when the drug is taken by the mouth, but the rapidity of disappearance is more marked in the recent than in the chronic cases. In the various forms of papular syphilide the eruption disappeared in many instances with astonishing rapidity, the recent cases, however, being far more amenable to treatment than the chronic ones. Both in the papular syphilide and in roseola, the eruption disappears most rapidly in the immediate vicinity of the sites of injection. The various nervous symptoms produced by syphilis, such as arthralgia, fugitive rheumatoid pains, and cephalalgia, sometimes yielded very rapidly to the treatment, and Dr. Taylor found that some patients whose sleep had been disturbed for many nights obtained an entire night's rest by one injection of one-eighth of a grain of the bichloride at midday, even when they had been previously unable to sleep after a morphia injection.

Dr. Taylor admits that mercury taken by the mouth will also allay these pains, but he has never known this method act so rapidly as the hypodermic injection does. One great advantage of the hypodermic method is the smallness of the dose required, an occasional injection, say once or twice a week, being sometimes all that is necessary in many instances. In cases of mucous patches and condylomata, Dr. Taylor does not consider the hypodermic method superior to the ordinary administration of mercury. Nor does he think it ap-

plicable in brain syphilis or in osseous lesions. The systematic effects of mercury when injected are far less unpleasant than when the drug is administered by the mouth, and Dr. Taylor never observed any irritation of the stomach, and only slight stomatitis when the injections were pushed to the extent of two each day. The time required for the disappearance of all the lesions of secondary syphilis by hypodermic injections cannot be fixed with precision, but he thinks that a mean average may be fixed at about six weeks or two months, but if the injections be given daily, or twice a day, the cure may be accelerated. The quantity of mercury required in the hypodermic treatment may be computed at about four grains of the bichloride, which are equal in efficacy to sixty grains of the protiodide, or of blue pill. But while Dr. Taylor claims several advantages for the hypodermic method, he does not assert that it materially lessens the percentage of relapses, which indeed will occur under any treatment and under no treatment at all. In testing the value of the hypodermic injections, Dr. Taylor paid great attention to some minute points which he conceives to be of great importance to the comfort of the patient and to the success of the treatment.

Among these is the exact amount of water used in the solution, and he finds the best proportion to be twelve drops of water to one-eighth of a grain of the bichloride, a greater quantity of fluid being more irritating. In a very able and impartial summary, Dr. Taylor specifies in an aphoristic form the advantages and disadvantages of the hypodermic method of treatment, and he admits that while in some cases it is very useful, yet its application is somewhat limited.

ART. 142.—*On the Methodical General Treatment of Syphilis in its First Stage.*

By Professor SIGMUND.

(*Wiener Medizinische Presse*, 51, 52, 1870; *Schmidt's Jahrbücher*, No. 4, 1871.)

Prof. von Sigmund considers that the proper period for the methodical constitutional treatment of syphilis is at the commencement of the general glandular affection, and when syphilitic affections have made their appearance on the integument and the mucous membranes. He bases this conclusion upon the facts that in the majority of cases the syphilitic disease terminates in the development of the symptoms of the first stage, that in these further symptoms do not appear and the patients make a perfect and permanent recovery, and, moreover, that syphilis may disappear spontaneously in the absence of any special treatment; whilst, on the other hand, by no means can the development of the symptoms of the first stage be prevented, since there is no prophylactic treatment by which they can be warded off. But the already developed forms of syphilitic disease in the integument, the mucous membranes, and the lymphatic glands, and the resulting lesions, will be lessened in extent, degree, and duration, and the course of the syphilis be rendered milder, if at the commencement of the above-named phenomena a suitable general treatment be applied.

With regard to the choice of means for the methodical general treatment of syphilis, Prof. von Sigmund, judging from the results of clinical experience, has no doubt as to the value of mercury. Of the various methods of using this agent and its preparations, Prof. von Sigmund holds that inunction of gray ointment is the superior and most suitable one, even in the first stage of the disease. In those cases only where the inunction plan is not practicable ought one to resort to any other plan of using mercury. The inunction plan, which has usually been reserved for the treatment of lingering and obstinate forms of later and even the latest periods of syphilis, has likewise, so long as it is used properly, an exceedingly favorable influence upon the recent forms of the first period, and serves to prevent increase of the disease and its extension to other organs and systems.

Prof. von Sigmund holds that the administration of mercurial preparations

in the form of pill is not advantageous, since this plan of treatment is uncertain, requires a long time, and readily disturbs the digestive organs. The use of gray ointment in the form of suppository was long ago shown to be but of little use. The subcutaneous injection of bichloride of mercury merits recommendation, but in rapidity and in the certainty of its results is decidedly inferior to inunction. The preparations of iodine, of which the iodide of potassium is the one chiefly used, cannot remove well-marked and undoubted forms of syphilis in the same manner as mercury; their use in slight forms seems to be doubtful, as these as readily disappear in the absence of any constitutional treatment as with the administration of the iodide; the use of iodide of potassium, moreover, results in unpleasant sequelæ. The chloride of potassium is held to be quite worthless, and also the numerous expensive decoctions. The administration of preparations of mercury in a simple and unmixed form is to be preferred to a mixture of the active medicinal agent with a decoction.

Prof. von Sigmund insists upon the necessity of paying close attention to the hygienic condition of syphilitic patients. Syphilis, from its commencement, affects the nutrition of important organs, and in its course influences considerably the general nutrition; for this reason the value of hygienic measures in the early stage of syphilis cannot be too energetically urged.

ART. 153.—*A New Theory of Syphilitic Infection.*

By F. N. OTIS, M.D.

(*New York Medical Journal*, July.)

At a meeting of the Medical Society of the County of New York on June 5th, Dr. F. N. Otis read a valuable paper with the above title, illustrating it by diagrams. The writer's sketch of the clinical history of syphilis, as well as his *résumé* of the views of prominent syphilographers, from the earliest discussion of the subject to the present time, we omit, referring the reader to the full paper in the *Medical Gazette* of June 10th. Summarizing these views, he says:—

"1. That in regard to the origin of syphilis, the accumulated learning of centuries affords but the most unsatisfactory speculations.

"2. That nothing is yet positively known of its nature. Accepted as a virus, with a power to contaminate the blood, it is known only by its effects.

"3. That nothing is yet positively known of the mode by which the human system is infected by it. We may accept, as the generally received opinion, the expression of Lancereaux, that 'the agents of the absorption of the syphilitic poison are those of other substances—namely, the venous capillaries, and more especially perhaps the lymphatic vessels.'

But while giving this as the received opinion, the writer states his own very decidedly, that the virus consists essentially of disease-germs similar to those described by Beale in the secretions of vaccinia, variola, &c., and that it is absorbed exclusively by the lymphatics.

The disease-germ of Beale, which is so minute as to require a magnifying power of one or two thousand diameters, is held by its discoverer to "consist of a peculiar kind of living germinal matter, the smallest particle of which, when supplied with its proper pabulum, will grow and multiply, giving rise to millions of little particles like itself, each having similar properties and powers." It is "living matter which has descended from the living matter of health, but which has acquired the property of retaining its life under new conditions," and has become possessed of such energy that it will grow and reproduce its like even when transferred from the seat of its development to another situation, provided only it find the proper nutriment. Besides these properties, it has the power of amœboid movement, like that demonstrated by Cohnheim in the white corpuscles of the blood.

Turning now to the lymphatic vessels, the writer adopts Robert Willis's theory, that one of their essential functions is to abstract from the blood its more fluid portions, thereby rendering it thicker in the veins than in the

arteries, and enabling the venous radicals to fulfil their office of absorption by endosmosis. This absorption of the watery parts of the blood by the lymphatics takes place, however, as pointed out by Von Recklinghausen, not directly from the blood-capillaries, but through the medium of the tissues these supply; and this in order not only to diminish the pressure and increase the consistency of the blood in the veins, but also to diminish the pressure of the serous fluid bathing and nourishing the tissues, by constantly abstracting a certain portion of it, and so making room for its constant renewal through the transudation of a fresh supply from the blood-capillaries. To this end the ultimate ramifications of the lymphatic system are always separated from those of the blood-system by intervening tissue—tissue in which the current of serous fluid must evidently be setting from the bloodvessels towards the lymphatics.

Suppose the syphilitic secretion applied to an abraded surface of skin or mucous membrane? "We have now two separate influences, which may act separately or conjointly to carry the disease-germ into the lymphatic circulation: 1. The current of tissue-fluid which constantly sets towards the lymphatic vessels. 2. The power of amœboid movement of the germ itself." If these be deemed insufficient, we may bring in the aid of the nomadic white blood-corpuscle, which can entrap in its extending arms, and incorporate with itself, not only germinal matter, but even foreign substances, and thus carry them along with it in its wanderings.

The paper argues that the disease-germ, whether by itself or in connection with the white corpuscle, will, in its amœboid progress, choose its course only towards the lymphatics, and not towards the veins, because it would not find in the latter its proper pabulum. The probable local action at the point of inoculation is given as follows:—

"1. A coagulation of the superficial tissue-fluids. A dilatation of the superficial bloodvessels. A consequent slowing of the circulation. The coincident attraction of a variable number of wandering white blood-corpuscles—phenomena associated with any irritation of living tissue.

"2. An entrapment of the syphilitic disease-germ by the wandering white blood-corpuscle (through its amœboid movement), and the incorporation of the disease-germ into the substance of the white corpuscle.

"3. An appropriation (as pabulum) by the disease-germ of the substance of the white corpuscle; and the consequent development and multiplication of the disease-germ in the white corpuscle.

"4. A consequent necessity of the white corpuscle for an increased supply of pabulum from the tissue-fluids, the absorption of which produces a rapid increase in size, and an abnormal tendency to fission or multiplication of the white corpuscle, through whose substance the multiplied disease-germs are now disseminated.

"5. Through the multiplication of the white corpuscle, thus impregnated by the syphilitic disease-germs, the spread of the syphilitic influence at the point of inoculation, and thence into the adjacent natural channels of the white corpuscle—namely, the lymphatic canals—through which, by aid of the lymphatic current, they are carried along until arrested in the substance of the nearest lymphatic gland.

"While, however, certain of the wandering white corpuscles, incorporated with the syphilitic disease-germs, are stimulated to abnormal proliferation, and go on to spread their influence beyond the sphere of this immediate action, certain others, whose predestined office is that of connected-tissue cells, become arrested in the coagulated albuminous medium at the point of inoculation; become fixed, and develop into connective-tissue fibrillæ, after the manner, described by Billroth, of the formation of normal cicatricial tissue, between which and the induration associated with, and considered peculiar to, the primary syphilitic lesion there appears to be but the difference of exaggerated formative power.

* * * * *

"The influence of the disease-germ, as it eventually comes to be felt in the lymphatic vessels underlying the inoculated point, is in accordance with its accepted power to separate and organize the fibrin contained in the lymph, and

thus to add rapidly to the induration previously inaugurated in the connective-tissue corpuscles outside the lymphatic canals, and underlying the abraded surface.

* * * * *

"In the foregoing plan or theory of syphilitic infection it will be observed that an important feature of syphilis, accepted and insisted on by all authorities, is entirely omitted—namely, the *period of incubation*. This period of incubation is defined as 'the interval of apparent rest,' occurring between the inoculation of the syphilitic virus, in a given subject, and the appearance of the specific local lesion at the inoculated point; which lesion is stated to be the result of a local reaction consequent upon a general infection of the system—this occurring at the point of inoculation alone."

The writer reasons that, as there is such utter want of uniformity in the length of this so-called period of incubation—there being recorded differences of thirty-six days in cases of experimental inoculation, and of even seventy days in carefully observed clinical cases—it cannot be compared with the period of incubation of the exanthemata, for example, and cannot be regarded as indicating constitutional infection at the moment of inoculation. Moreover, in certain cases showing a very brief period (one of them only thirty-six hours) the lesion was found at the frenum. "Now it is just at this point that the superficial lymphatics of the glans penis approach nearest to the surface, rising, in this especial locality, in some instances, according to Belaieff, to a point just underneath the epithelium."

"Further observations, which shall result in connecting a brief period of incubation with the occurrence of the initial lesion at the anterior and inferior extremity of the glans penis, may yet be made, and afford a corroboration of my own view of the incubative period of syphilis—namely, that it is the period required for the syphilitic disease-germ to traverse the distance from the point of inoculation to the interior of a lymphatic vessel, by the processes described in a previous part of this paper. Consequently, according to this view, syphilis is a local disease up to the period of the entrance of the disease-germ into a lymphatic canal. And I am also of the opinion that, instead of infecting the system at large, even at this time, it passes on, through the lymphatic vessel, into the parenchyma of the lymphatic gland with which it is connected, where it is retained, by conditions arising from the character of the parenchyma of the gland, and the coagulation of its tissue-fluids, for a period corresponding to the so-called secondary incubation of syphilis, recognized by all authorities as taking place before the constitutional evidences of the disease are ever manifested."

"In conclusion, I would state my belief in the possibility of a satisfactory explanation of some of the latter manifestations of syphilis, through cases wholly dependent upon interference with the *lymphatic* circulation; and that further researches in the direction I have indicated will corroborate my claim, *that it is the germinal element of the blood and tissues alone that is primarily affected in syphilitic disease*; and that it is through the *lymphatic* system alone that the syphilitic influence is propagated to parts remote from the point of inoculation; and finally, that it is to deposits of fibrin, organized, through the syphilitic influence, in and around the lymph-vessels and lymph-sacs, in the earlier stages of disease, and its subsequent contraction, that the lymphatic obstructions resulting in various external and internal lesions, in the later stages of the disease, are chiefly due."

ART. 144.—*The Unity of the Syphilitic Virus.*¹

By S. MESSENGER BRADLEY, F.R.C.S.

(*British Medical Journal*, August 26.)

Mr. Bradley commenced by stating that, in order to demonstrate the unity of the syphilitic virus, it was requisite to produce a soft, non-infecting sore by

¹ Read at the Thirty-ninth Annual Meeting of the British Medical Association.

direct inoculation from a hard infecting chancre upon a virgin subject. He had performed many experiments upon monkeys, guinea-pigs, and kittens, with the result of producing a characteristic soft chancre in three instances by direct inoculation from an infecting sore, the virus being taken prior to cicatrization. In each case the chancre from which the virus was taken was accompanied by multiple inguinal adenopathy, and other evidences of constitutional infection; in each case the inoculated sore appeared within a few days after the introduction of the matter; in each case it suppurated freely, was capable of auto-inoculation, and inoculation upon fresh animals; in no case were there constitutional symptoms at the termination of three months. Mr. Bradley alluded to the fact that this conversion of one form of syphilis into another (in many respects a very different one) did not commonly occur, and drew a parallel between the history of syphilis in this respect and the history of the vegetable parasites, which were all confessedly interchangeable, but which, as a matter of observation, very rarely underwent this mutual change.

ART. 145.—*Iodide of Potassium in Tertiary Syphilis.*

By FREEMAN J. BUMSTEAD, M.D., of New York.

(*The Medical Record*, October 16.)

Prof. Freeman J. Bumstead, of New York, in his *Hints on the Treatment of Syphilis*, is convinced by no small experience that the iodide of potassium cannot be relied upon alone for permanent relief in pure cases of tertiary syphilis; and that the judicious use of mercury, especially by inunction, concurrently with the iodide, affords a much greater degree of security. The "mixed treatment," administered in the form of large doses of iodide of potassium internally, and repeated courses of mercurial inunction externally, has relieved more desperate cases of syphilis than any other mode of practice with which he is acquainted. The books tell us that mercury and iodide of potassium should not be used at the same time, for fear of severe salivation through the evolution of the biniodide of mercury in the system. Experience, he says, better than books, teaches us that this fear is groundless.

Of the three methods for the external use of mercury more commonly employed—viz., inunction, fumigation, and hypodermic injection—he decidedly prefers the first named, for which he has given minute directions in the third edition of his treatise upon venereal diseases. Moist mercurial fumigation, so strongly recommended by Mr. Langston Parker, is indeed less repugnant to sensitive patients; but, judging from his own observation, is less convenient, and requires more time for each bath than patients can well spare. It is pretty generally conceded by those who have made an impartial trial of hypodermic injections in the treatment of syphilis, that this method is not to be recommended for general adoption. Mercurial suppositories introduced into the rectum were recommended by Lebert, *Berl. klin. Wochenschrift*. Prof. Bumstead made a trial of them recently in four cases at Charity Hospital, with results so unsatisfactory in controlling the disease that he abandoned the experiment.

In alluding to the errors too often committed by practitioners in the treatment of old and obstinate cases of syphilis, he states that the most heinous of all is an ignorance of the dose of iodide of potassium requisite to give this agent its full effect and to test its power. By many men, doses of two, five, or seven grains, given three times a day, are regarded as the utmost limit, beyond which it is unnecessary to go. If the symptoms do not yield to this treatment, it is concluded that the iodide is not the remedy, and something else is tried. To think of a patient suffering with the nocturnal agony of periostitis, or threatened with destruction of the palate or of the nose, being thus tampered with, is almost enough to make one's blood boil. Why, the iodide may be used with safety, and must be used, if its full effect is to be attained, with an unsparing hand. Relief will be had, and important organs will be saved, by giving one hundred grains a day when the disease only laughs at fifteen or twenty. Patients find this out themselves when the physician has stinted

them in the use of this remedy; and will tell him, as one of his patients with syphilitic necrosis of the ulna recently did tell him, that forty grains three times a day had no effect, while fifty, three times a day, were at once followed by a manifest improvement. The iodide of potassium has been given with impunity in the quantity of two or three ounces in twenty-four hours for several weeks, and even months, but this amount is unnecessarily large. He has never had occasion to exceed three drachms a day, and from a drachm and a half to two drachms is usually sufficient.

ART. 146.—On the Condition of the Veins, especially of the Inter- and Intra-muscular Veins, at the Surface and in the Neighborhood of Suppurating Wounds.

By M. H. PETIT, Externe to M. VERNEUIL.

(*Gazette Hebdomadaire*, No. 31, 1871.)

This article concludes with the following observations:—

"The intra- and inter-muscular veins, whatever be their calibre, which are in permanent contact with a focus of suppuration, undergo various changes. In an amputation wound their peripheral extremities which are in contact with pus are closed by a clot, which in sphacelus of the flaps is destroyed, or becomes softened and infiltrated with septic products.

"When these peripheral extremities, which were formerly healthy, are brought into contact with pus formed in consequence of the extension of the process of suppuration, the venous walls may be destroyed, so as to allow the vessels to take up this pure pus, or the blood which they contain may coagulate; the clot thus formed may extend gradually along the vessel and into the neighboring vessels, and, these undergoing softening, may acquire the aspect and properties of pus. The irritating qualities of this clot seem to be demonstrated by the formation on the internal surface of the femoral vein of a small inflammatory patch described in one of my reported cases.

"The contents of these small veins, whether original pus or softened blood-clot, are cast into circulation, and there actually give rise to pulmonary metastatic abscesses.

"M. Verneuil, who has paid much attention to the question of the mechanism of embolism, has often explained to me his ideas on this point.

"It is not sufficient, he states, to have demonstrated in the neighborhood of the wound, sometimes the permeability of the veins, at others the existence of thrombosis more or less susceptible of displacement; it is necessary to explain how pus, or clots, either wholly or in fragments, emigrate to the course of the circulating stream, and thus become mixed with the blood, and are carried to central parts of the body.

"In amputation wounds, for example, where there is no *vis a tergo*, it is difficult to understand centripetal migration even over a short space; still, in examining this point closely, one discovers some circumstances which seem to favor this migration. In amputations at the lower extremity, from the fact of dorsal decubitus and the more or less elevated position in which the stump is usually placed, the wound, instead of occupying the most dependent part of the limb, often forms the summit, or at least is found on a level with the axis of the venous current in the upper parts of the limb. The particles, therefore, which are susceptible of displacement have not to struggle against gravity; on some occasions this force may favor their progression towards the centre.

"Elevation of the limb during dressing of the wound, pressure on parts of the stump, and early movement of the patient, may act in a similar way. A coincidence between movements of this kind and an almost immediate development of serious symptoms, has been observed too often to allow one to doubt that there is here a certain relation of cause and effect.

"The asserted existence of thrombi in the intra-muscular veins would account in certain cases for the formation of emboli. Subjected to the direct action of the contractile agent, these thrombi may be shaken, broken up, de-

tached and displaced in the active movements of the stump or limb. The action of cold during a dressing is capable of exciting almost imperceptible, but still sufficient, contractions in the muscles. In all cases exposure of a serious wound to cold, even for a short time, is often the signal for the development of bad symptoms.

"In wounds of the continuity of limbs, compound fractures, resections, etc., thrombi form near the wound, and extend for some distance beyond it, until they reach veins in which the circulation is carried on. Their proximal extremity often projects into the cavity of these veins, and is incessantly struck by the waves of blood proceeding from the capillaries to the heart: hence the constant risk of breaking up and transport along the circulation.

"There is another circumstance which deserves to be pointed out. When one follows along its whole extent a long vein, such as is often met with among the intra-muscular veins, it is observed to be composed of several successive segments, some empty, others completely obstructed by clots; and again others imperfectly filled with more or less consistent pulpy débris: here and there collateral or anastomotic veins in which the blood still circulates open into the thrombosed vein at points where it is not altogether obstructed. There seems to be no room for doubting that these débris of clot may become detached, and afterwards fixed in these collateral veins and there form a kind of embolism.

"In cases of wounded thigh the deep femoral vein and the inter- and intra-muscular branches present very especially all the above-mentioned changes.

"These details, although perhaps very minute, are still exact, and easy to verify. It may be permitted us then to utilize them in explaining the pathology, still so obscure, of the formation of metastatic abscesses.

"If all this is accepted, nothing more remains for the proof of the septicæmic and embolic theory of pyæmia than to find out whether the migratory fragments penetrate, or are imbibed before the putrid pus of the wound: but here the difficulties are small. When vessels are open over a wound, they may take up septic fluid or pus, be it only by capillary action. If, on the contrary, clots exist, they constitute but an imperfect obstacle to toxic penetration; for, in addition to their adhesion not always being complete, and their sometimes becoming tubulated, it is known that these clots are capable of endosmosis, and that they may even imbibe along a considerable extent fluids which bathe only their peripheral extremity.

"Finally, and in the instance where primary putrid impregnation would not be probable, it would not be necessary to infer that this embolism is benign, since it might coincide with an anterior poisoning of the blood by traumatic septicæmia."

ART. 147.—*On Local Changes after Nerve-injuries in the Extremities.*

By Prof. FISCHER, of Breslau.

(*Berliner klinische Wochenschrift*, viii. 13, 1871; *Schmidt's Jahrbücher*, No. 6, 1871.)

The author states his experience concerning the nutritive changes which result from severe injuries of mixed nerves, and in many points adds to what is already known on this subject.

With regard to the system of horny growths, that is to say the skin, nails, and hair, there is nothing particularly new; only the statement is interesting that the rosy and polished integument appears on section peculiarly opaque and shining, that the exuded serum contains many white blood-globules, and that the microscope reveals a profuse infiltration of small cells.

The exanthems which appear at a later period are of interest. We have eczema, especially at the borders of the nails and in the palms, which sometimes leads to the formation of small slowly healing ulcers, and is sometimes relieved after an intense outbreak of burning pain in the shining portions of

skin. There may also be ecthymatous pustules, which make their appearance in succession or simultaneously at several parts of the body, and terminate in ulcers. In addition there is sometimes observed a thick scabbing of epidermis which sometimes follows in fine lines the course of cutaneous nerves, leaving the intermediate skin normal.

The most severe form of local changes in the integument consists in neuro-paralytic suppuration, which comes on sometimes spontaneously, sometimes after external irritation; it either takes a superficial course or penetrates deeply. In the first case, in the shape of panaritium superficiale; in the second, in that of panaritium mutilans, or perforating ulcer of the foot.

The neuro-paralytic inflammation of joints occurs generally as a chronic adhesive arthritis, which finally leads to ankylosis, especially in the articulations of the fingers and toes. The joints become painful, swell, crepitate during passive movements, and finally waste, or are destroyed in consequence of caries of the ends of the bone, or of detachment of the epiphyses and subluxation.

The bones at first are increased very much in size, but subsequently undergo simple atrophy in all directions, the process commencing at the articular ends. Caries and necrosis rarely occur.

The anomalies of temperature and secretion are less constant. At first there is increased heat in the paralyzed part, later on this part is cooler, and sweats more than the normal condition.

With regard to the nature of the above described nutritive changes, which are first hypertrophic and afterwards atrophic, they are clearly not the result of any external causes of irritation, since they occur in cases where the cutaneous sensibility is preserved as well as those where it has been lost, although more frequently in the latter class of cases. The lesions therefore cannot be attributed to the changes in the vaso-motor nerves which course along the anterior roots of the spinal cord, but to the trophical fibres, which in some cases are more and in some less injured than the other fibres.

ART. 148.—*On Difficulties of Diagnosis in certain Cases of Commencing Erysipelas.*¹

By M. VERNEUIL.

(*Gazette Hebdomadaire*, No. 17, 18, 1871.)

"The diagnosis of surgical complications is sometimes surrounded with difficulties which one must endeavor to vanquish. This remark applies to the diagnosis of commencing erysipelas before the appearance of redness. A youth, eighteen years of age, was admitted under my care for the treatment of a bubo which had opened and was regularly cicatrizing. There remained but a small linear wound, and the patient appeared to be in a condition of almost perfect health. On the following day I found that he had intense fever; the aspect of his case was entirely changed; afterwards violent rigors came on, which were followed by sweating. The wound had undergone no appreciable change. The thermometer was 40°·5 C. I was uncertain as to the meaning of these symptoms. On the following day erysipelas had presented itself about the edges of the wound. The fever gradually ceased and the patient ultimately recovered.

"Shortly afterwards a woman, sixty-eight years of age, was admitted with fracture of the neck of the femur. The limb was placed upon Bonnet's splint, the edges of which wounded slightly the skin of the buttock, and produced excoriation; on the thirtieth day the apparatus was removed. The excoriation then healed, and the woman was in good health and spirits. On the following day I was informed that the patient had during the night the following symptoms: almost complete resolution, lividity of the face, convulsive movements, embarrassed speech, and rigidity of the limbs. At my visit the patient was

¹ Communicated to the Société de Chirurgie, Paris.

scarcely able to speak; there was contraction of both forearms, but no paralysis. Although there was no apparent fever, the thermometer was over 40° . As I could find no other cause for these phenomena, I thought of erysipelas, which indeed manifested itself on the following day. In hemorrhagic affections of the brain this elevation of temperature has not been observed. The patient died. At the autopsy nothing abnormal was found in the viscera. A patch of softening was found in each optic thalamus. This explains the symmetrical phenomena of contraction, and the fact mentioned by the patient's son that she had previously had three attacks of a similar nature.

"The third case was one of a young man from whom I removed a parotid enchondroma. The patient was nearly well when the interne informed me one day that his temperature had mounted to 39° ; there was at the same time no appreciable malaise. On the following day the condition was the same. On the third day there was confirmed fever, malaise, and erysipelas.

"On comparing the thermometric tracings obtained in the cases just described, it may be stated that the commencement of an erysipelatous complication, in the absence of fever, is announced by an almost perpendicular ascent of the thermometric line. There were no other symptoms to assist the diagnosis. Vomiting did not occur in any of the cases. I do not wish to state that elevation of temperature is the special sign of erysipelas, but it is a sign which, in the cases just reported, rendered to me great service."

ART. 149.—*On Delirium Tremens after Traumatic Lesions.*¹

By M. VERNEUIL.

(*Archives Générales de Médecine*, No. 1, 1871.)

1. Delirium tremens is very frequently developed after traumatic lesions, and then constitutes a serious prognostic.

2. The use of alcohol is not sufficient to explain either the frequency or the gravity of this affection, the causes of which are to be especially sought for in the seat, the nature, and the phase of the wound.

3. This may disturb the cerebral functions in various ways; directly, when the violence has involved the cranial case and its contents; indirectly, according to one of two modes: 1st, through the medium of the blood changes, both in quantity and in quality; this is delirium from anæmia and delirium from infection; 2d, through the nervous system, the irritation of which, derived from the seat of injury and reaching the centrum, excites a reflex delirium.

4. These three determining causes impress on delirium special characters, which authorize the admission of three forms, which are distinct both in their pathological relations and with regard to prognosis. The interest of therapeutics demands that these forms, and their association be recognized at the bedside, a matter which is in most instances practicable.

5. No specific remedy exists for delirium tremens. The treatment ought to vary according to the form of the affection and the presumed condition of the brain and the other organs of the economy. The most promising remedies, and those which, when administered with discernment, have succeeded the best, are alcohol and its derivatives, and tonics and stimulants in cases of infectious delirium; opium, bromide of potassium, and chloral in reflex delirium. When the latter form is slight, expectation may suffice.

6. Tartar emetic, purgatives, digitalis, local antiphlogistics, and even revulsives, may be of service if the state of the brain and its membranes and of other large viscera indicates their use.

¹ From a Discourse made before the Académie de Médecine.

ART. 150.—*Treatment of Tetanus.*

By P. O. H. BRADY, M.R.C.S.

(The Lancet, Sept. 23.)

Mr. Brady, of Watford, reports a case of successful treatment of this disease which occurred to a farm-laborer of fifty years, owing to the thumb of the left hand being severely crushed by the fall of a heavy plank of timber, lacerating the flesh, and nearly tearing off the nail. The patient applied poultices himself, and appeared to be going on very well, when, on trying to continue his work, he felt "a curious sensation all along the spine, such as he never felt before." After some days lock-jaw set in, and Mr. Brady was sent for. The man was in bed, propped up, and leaning forward, with symptoms of emprosthotonos; the jaws were firmly locked; muscles of the face, throat, and neck rigid and contracted; pulse small, quick, and very irregular; skin dry; rigors frequent, with cold extremities; great tenderness along the spinal cord, more particularly over the cervical vertebræ.

Having previously seen a few cases treated with the various forms of opium, belladonna, and other narcotics, without any good result, every case terminating in death, Mr. Brady considered that line of treatment waste of time; but having noticed the power of bromide of ammonia over nervous affections implicating the spine, he determined to try it in large doses. The patient having lost the greater number of his side teeth, liquids were introduced, although deglutition was extremely difficult. Mr. Brady commenced with the following mixture: Bromide of ammonia, half a drachm; spirits of chloroform, one drachm; camphor mixture, an ounce and a half; every four hours. After twenty-four hours there was just a perceptible improvement. The doses of bromide of ammonia and spirits of chloroform were increased one-third more, every four hours, as before. After forty-eight hours the skin began to act powerfully; the sheeting, blankets, and bed were completely saturated. The perspiration being free from the slightest acidity, differed in that respect from the perspiration of rheumatic fever. Still there was no relaxation of jaws or muscles, and he was unable to lie down. The medicine was steadily persevered in, whilst as much nourishment was given as possible. There was great obstinacy of bowels, requiring twenty grains of jalapine, combined with the same quantity of scammony, every morning, to produce one evacuation. Five grains of calomel were occasionally added. After eight days the jaws and muscles were slightly relaxed, but did not admit of his lying down. After two weeks the relaxation was complete; he could open his mouth, but had no power of mastication for several days. Galvanism was tried, producing spasmodic twitchings of the facial muscles, but was not of much use. Extreme prostration remained after the attack was subdued. Quinine, port wine, &c. &c., overcame that, and the patient soon resumed his employment.

ART. 151.—*On the Secondary Traumatic Lesions of Bone—i.e., the Inflammatory Disorders of Bone which result from Injury.*

By JOHN A. LIDELL, M.D., of New York.

(American Journal of the Medical Sciences, July.)

An attentive consideration of this subject¹ has led Dr. Lidell to adopt the following conclusions, which are presented for publication in a compendious form:—

"1. Osteo-myelitis occurs much more frequently than has generally been supposed. This statement obtains in both civil and military practice, and with the spontaneous as well as with the traumatic form of the disease.

¹ Vide *Surgical Memoirs of the War of the Rebellion*, collected and published by the U. S. Sanitary Commission, vol. i. Hurd & Houghton, New York, 1870.

"2. When after amputation, or resection, or compound fracture, or contusion of bone, patients do badly without apparent cause, oftentimes this disease is present, and unsuspected leads to disastrous consequences.

"3. *Osteo-myelitis* is a much more formidable disorder than *periostitis*. *Traumatic osteo-myelitis very often destroys life; traumatic periostitis almost never.*

"4. *Traumatic otitis* (i.e., traumatic inflammation of the bone-tissue proper) occurs but very seldom, or perhaps never, as a primary affection. Secondary inflammation of the osseous tissue, however, is often met with when bone is injured.

"5. Secondary otitis, but especially its degenerative and destructive forms, is induced by osteo-myelitis much more frequently than by periostitis.

"6. The structural changes which the inflammatory process may occasion in the marrow itself, are—*a*, its transformation into new bone (endostosis); *b*, hepatization or carnification (sclerosis) of the medullary tissue; *c*, suppuration or abscess; and *d*, gangrene.

"7. Osteo-myelitis may terminate in recovery—*a*, by resolution, and *b*, by metamorphosis of the irritated medullary tissue into new bone. It is probable that inflammation of the marrow very often disappears—i.e., is cured—in each of these two ways.

"8. The inflammatory process, when excited in the marrow—i.e., inflammation of the marrow—is very apt to spread to the surrounding bone, to the periosteum, and to the connective tissue and other structures external to that membrane.

"9. Secondary otitis, when induced in this way, may lead to condensation (*sclerosis*) of the bone-tissue, to rarefaction (*osteoporosis* or *medullization*), to ulceration (*caries*), and to gangrene (*necrosis*). When sclerosis occurs in bone, the inflammatory process is in reality formative in character; but when the other three results are produced, or either of them, it becomes degenerative or destructive, at least so far as the osseous tissue is concerned. Sometimes all of these consequences of otitis—viz., sclerosis, medullization, caries, and necrosis—are severally shown in different parts of the same bone.

"10. When inflammatory irritation is transmitted to the periosteum from the interior of bone, it is apt to excite the deep or osteo-genetic layer of that membrane to fresh activity, and thus lead to the formation of new osseous laminae (*periostosis*). Occasionally, however, when the irritation is very intense, and the constitutional condition of the subject happens to be bad—e.g., scorbutic, or septicemic from want of food, or scrofulous—it leads to the formation of pus beneath the periosteum, instead of new bone; but the proliferating layer of the periosteum is generally much less disposed to engage in the purulent transformation than the medullary tissue. Not unfrequently the marrow is found extensively destroyed by suppurative inflammation, without there being any disorder of the periosteum, except some slight reddening and thickening. Generally the periosteum does not become spontaneously detached from the underlying bone unless necrosis has occurred. While moderate loosening of this membrane is not unfrequently found in connection with osteo-myelitis, extensive detachment, not due to necrosis, is, according to my experience, very rare.

"11. Primary periostitis of traumatic origin but seldom gives rise to much trouble. Some degree of periosteal inflammation, however, is often produced by injury. It generally terminates in cure by resolution, or leads to the formation of new bone. Occasionally periosteal abscesses of limited dimensions or small size form in consequence of it; and in rare instances destructive results ensue.

"12. Necrosis is dry gangrene of bone. The inflammation is probably the most common form. The otitis which produces it is generally acute. The circulation of nutrient blood in the affected part of bone suddenly becomes arrested from pressure (compression) exerted by the products of the inflammatory process (exudation and wandering cells) upon the capillary bloodvessels, when effused within the unyielding walls of the Haversian canals. The secondary otitis which thus produces necrosis pretty certainly has its starting-point in

inflammation of the marrow much more frequently than in inflammation of the periosteum.

"But necrosis is not unfrequently occasioned directly by violence. In the cases belonging to this category, the circulation of blood and nutrient juices is arrested in the affected part of bone, because the force of the blow or other form of injury has sufficed to smash the Haversian canals, the canaliculi, and the lacunæ, to a sufficient extent, without producing any solution of continuity or fracture that is visible to the unaided eye.

"Removal of the periosteum of the marrow does not necessarily compromise the vitality of the exposed osseous tissue—i. e., does not necessarily produce necrosis. Under favorable circumstances each of these structures is replaced by a new outgrowth from the bone itself, having the same nature and composition as the lost part.

"13. I have also several times seen a *humid or mephitic gangrene of bone*. It is an affection quite distinct from ordinary necrosis, and is produced by causes of which we have at present but little knowledge. In it the disordered bone is wet, more or less softened or rotted, discolored—i. e., more or less blackened—and very fetid in smell.

"14. The marrow, when inflamed, is more inclined to undergo the purulent transformation—i. e., to suppurate—than any other structure in the whole body.

"15. Abscess of the marrow induces pyæmia much more frequently than abscess of the connective tissue, or abscess occurring in any other structure of the body; and the reason of this important fact is because the pyæmic poison or contagium is absorbed from the marrow much more readily than from other structures, and perhaps also because suppuration in the medullary tissue is more liable to degenerate into putrid forms than suppuration when occurring in the other tissues.

"16. Osteo-myelitis not unfrequently leads to pyarthrosis by causing the inflammatory process to spread to and enter a joint-cavity. Medullitis, when located in the extremities, generally exhibits a marked tendency to travel upwards—i. e., towards the trunk. For this reason the articulations invaded by it are usually found to be those which lie next above the bones wherein it has commenced. The cartilage of incrustation in such cases is generally found to be pierced by a considerable number of minute red holes, which look as if they had been made with a punch. This form of pyarthrosis is, for the most part, not very painful. It comes on silently, and is apt to be overlooked. After it has lasted for some time, the cartilage of incrustation belonging to the next bone may also become pierced with little red holes like those described above, and the inflammatory process then spreads from the joint to the medullary tissue of the next bone. Thus I have seen inflammation commencing in the medullary canal or tissue of the tibia, by spreading, invade the knee-joint, thereby producing pyarthrosis of the knee, and then spreading still further upwards to the femur, occasion osteo-myelitis of that bone. Thus also I have known osteo-myelitis of the femur to induce pyarthrosis of the hip, and afterwards occasion osteo-myelitis of the os innominatum. But medullitis sometimes occasions pyarthrosis in another way—viz., indirectly, by inducing a pyæmic poisoning of the blood, which in turn occasions suppurative inflammation of some joint.

"17. When new bone is developed from the marrow, or from the common connective tissue, or from the osteo-genetic layer of the periosteum, it is produced without the exudation of coagulable lymph or the presence of any so-called blastema, by proliferation and direct metamorphosis (transformation) of pre-existing histological structures. So, also, when the inflammatory irritation is more intense, the medullary tissue becomes converted into purulent matter (abscess), by direct transformation of the medullary cells into pus-corpuscles, and of the basis or intercellular substance into liquor puris.

"18. The connective tissue external to the periosteum (i. e., the common connective or so-called areolar tissue), when irritated or inflamed, generally does not produce new bone, unless there is corresponding irritation of the bone-structures themselves. The presence of some osteal lesion is generally required in order to give the formative process in connective tissue an osteo-genetic

direction. Unless the bone is wounded, new osseous growths but seldom or never form amid muscular structures, at least in cases of gunshot injury."

Treatment.—With regard to the treatment required by the secondary traumatic lesions of bone, and especially with regard to the operative procedures required by them, experience and reflection have led Dr. Lidell to adopt the following views:—

"1. Diffuse osteo-myelitis, whether traumatic or spontaneous in origin, is very perilous, and generally requires that the diseased member should be promptly excised, if the patient's life is to be saved. In such cases, exarticulation is generally preferable to amputation in the continuity, because by the former procedure the medullary tissue is not subjected to injury. If, however, for any cause, amputation is resorted to instead of exarticulation, it should be performed not through the diseased bone itself, but through the sound one next above the seat of the disease, since it is essential to success that all the diseased tissue should be removed by the operation. The operative procedure, whether it be exarticulation or amputation in the continuity, must as a rule be resorted to quickly in order to prove successful, because diffuse suppurative medullitis in most cases speedily induces the purulent infection or pyæmia, and thus quickly occasions death.

"2. When abscess, whether superficial or deep-seated, forms in connection with any bone-lesion, it should generally be promptly evacuated by free incision, for thus the cure may be hastened, and at the same time the tendency to pyæmia may be considerably diminished.

"3. In treating the chronic localized or circumscribed forms of bone-disease when necrosis occurs, the dead bone should, for the most part, be extracted by operation as soon as it becomes detached, for then longer delay is usually fraught with evil.

"4. Chronic abscess of the bones in general, abscess of the diploë, and abscess situated between the skull and the dura mater, usually require that their osseous walls should be pierced with a trephine, in order to set the imprisoned matter free.

"5. In the chronic cases of bone-diseases in general, and especially in those of traumatic origin, the timely extraction of necrosed fragments, the prompt evacuation of matter from all abscesses—from those occurring in the soft parts by incision, and from those occurring in the bone itself by trephining—aided by appropriate constitutional treatment, ordinarily suffice to effect a cure.

"6. In some cases belonging to this category, however, when important joints become implicated, or where abscess occurs in the head of such bones as the femur, tibia, and humerus, or where caries or any other form of degenerative or destructive osteitis gets far advanced or widely spread, it generally becomes necessary to cut off the diseased member in order to save life. In such cases also exarticulation is generally preferable to amputation in the continuity, first, because it is more philosophical, but mainly because it yields much better results. Reamputation of stumps at joints (exarticulation) for chronic osteo-myelitis, has proved to be a very successful operation."

ART. 152.—*On the Modifications in the Animal Temperature caused by Extensive Injuries.*¹

By M. DEMARQUAY.

(*Gazette Médicale de Paris*, No. 36, 1871.)

"At the commencement of the fighting under the walls of Paris I conceived the idea of determining by exact thermometrical researches the modifications undergone by the animal temperature in consequence of severe injuries. The condition of external temperature, however, and especially the time required for the transport of wounded subjects during the sharp winter, added their influence to that of the injury itself, and became a cause of error. In the months of

¹ Communicated to the Académie des Sciences.

April and May the conditions were changed; the temperature became milder and the fighting took place close to our ambulances, whither the wounded were immediately moved, and where they were subjected to observation. Under these circumstances I was able to collect forty-eight observations of more or less severe injuries, with the exact determination of the lowering of the animal temperature. These observations have been arranged by me in the following manner.

"The first table includes thirty-eight observations of injuries caused by fragments of shell or by balls. In all cases the skeleton was more or less involved; in all there was a more or less severe lesion of the bones or articulations; in some cases a portion of one or both limbs had been removed. In all these observations there was found a reduction of temperature varying from one degree or some tenths of a degree to several degrees. I never observed a lowering of the temperature beyond 34° or 35° (Centigrade). In most cases death occurred before the thermometer had attained the limit of 35° . My observations were made on men of middle age, that is, between twenty and fifty years. All other things being equal, similar injuries did not always cause the same reduction of temperature; it was more marked in men of forty years of age than in those of twenty years.

"The subjects in whom I made out the greatest reduction of the animal temperature were those who had given themselves up for a long time to an immoderate use of alcohol. All the individuals in whom I made out a marked diminution of temperature, and in whom the thermometer sank to 35° , died with or without an operation: when they were operated upon, reaction did not take place: the thermometrical study of a severely wounded subject may become then an element of prognosis, and of serious operative indication. How can one explain this profound modification of animal temperature from an injury involving a part more or less remote from the trunk? Without doubt the fact may be explained by asserting that this phenomenon is the consequence of the disturbance of the organism. But if, as physiology indicates, the temperature is the result of internal combustion, how in such manner can the suddenness of the result be explained? For the present I restrict myself to the bare statement of the facts which I have observed, leaving it to physiologists to point out some explanation.

"A second table relates to penetrating wounds of the abdomen. It includes six cases: in these instances of penetrating wound of the abdomen by balls or fragments of shell, death was rapid, and the animal temperature underwent considerable depression, for the thermometer rapidly descended to 35° or 34° . According to a report which I presented to the Academy of Sciences in 1862, upon the modifications in the animal temperature caused by the deligation of a loop of intestine, I thought at first that the depression of temperature in the recent cases was due to strangulation of a portion of intestine by the wound, but I have been able to make out that this depression was produced independently of all compression of the intestine, and that the violence of the injury was the sole cause of this phenomenon.

"In the third table I have demonstrated the fact, previously indicated by Billroth, that severe though not very extended burns cause in most instances a marked depression of temperature."

ART. 153.—On the Treatment of Bedsores.

By WILLIAM A. HAMMOND, M.D.

(*Treatise on Diseases of the Nervous System.* 8vo. New York.)

In the chapter on "Spinal Meningitis" are some valuable remarks on the treatment of the bedsores that so frequently accompany the chronic form of that disease. Although not presenting anything positively new, they contain descriptions of methods of treatment that are not so generally known as they ought to be.

"For the cure of the bedsores the method recommended by Dr. Brown-

Séguard may be used. It consists in the alternate application of sponges, one of which is saturated with hot water, and the other with cold water. This should be done for five or ten minutes every day, and the effect is to increase the activity of the circulation of the part, and to promote the formation of granulations.

"But I have generally preferred the method by galvanism first suggested and employed by Crussel, of St. Petersburg, and which I used for the treatment of indolent ulcers with almost invariable success in 1859, when surgeon to the Baltimore Infirmary. The method was also recommended by Mr. Spencer Wells. During the last six years I have employed it to a great extent in the treatment of bedsores caused by diseases of the spinal cord, and with scarcely a failure; indeed, I may say without any failure, except in two cases where deep sinuses had formed, which could not be reached by the apparatus.

"A thin silver plate—no thicker than a sheet of paper—is cut to the exact size and shape of the bed sore; a zinc plate of about the same size is connected with the silver plate by a fine silver or copper wire six or eight inches in length. The silver plate is then placed in immediate contact with the bed sore, and the zinc plate on some part of the skin above, a piece of chamois-skin soaked in vinegar intervening. This must be kept moist, or there is little or no action of the battery. Within a few hours the effect is perceptible, and in a day or two the cure is complete in the great majority of cases. In a few instances a longer time is required. I have frequently seen bedsores three or four inches in diameter, and half an inch deep, heal entirely over in forty-eight hours. Mr. Spencer Wells states that he has often witnessed large ulcers covered with granulations within twenty-four hours, and completely filled up and cicatrization begun in forty-eight hours. During his recent visit to this country I informed him of my experience, and he reiterated his opinion that it was the best of all methods for treating ulcers of indolent character and bedsores."

ART. 154.—*On Capillary Embolism in Pyæmia.*

By GEORGE HAYEM, M.D.

(*Gazette Hebdomadaire*, No. 19, 1871.)

Dr. Hayem states that in fatal cases of pyæmia the liver usually presents certain lesions which readily escape a superficial examination. These lesions are very distinct from the abscesses properly so called, but are not less characteristic of purulent infection.

The following is the condition of the liver as described by Dr. Hayem :—

"The organ preserves its normal size, or rather it is somewhat larger, the increase being due to venous congestion. The capsule is healthy, or presents more or less evident traces of perihepatitis. When it is transparent, it shows through it pale, irregularly circumscribed patches of a yellowish-white color, which are scattered, sometimes in great numbers, over different parts of the organ. On making a section at right angles to the surfaces of these spots, it is seen that the change penetrates to a depth varying from some millimetres to several centimetres. The altered tissue retains its normal consistence, and is only distinguished from the rest of the organ by its paleness. In almost all instances the form of the lesion is that of an irregular cone, the base of which is directed towards the periphery of the liver, at the edge of which it is marked by an irregular line.

"In some cases there are no other characters visible to the naked eye, but often, on the contrary, one may, by attentive examination, make out the following: around some of the pale islets the hepatic tissue presents a more or less pronounced venous congestion and a slight ecchymotic tint. Moreover, in the centre of apparently normal tissue may be seen here and there small dilated veins, around which there is slight effusion of blood.

"In the kidneys of the same subjects may be found morbid changes presenting the same characters, although less frequently than in the liver. These small pale spots or patches may at first sight be readily taken for miliary tu-

bercle, but differ in the following respects: They do not project above the cut surface; when pricked with a needle or the point of a scalpel, they immediately disappear or melt down into fluid; moreover, their coloration is more intensely and more uniformly yellow than that of miliary tubercle.

"On microscopical examination of a piece of liver thus affected, which has been hardened in alcohol, an infinite number of small and perfectly rounded masses are seen disseminated in the hepatic parenchyma. These are masses of compressed leucocytes; they are placed more especially at the periphery of the lobules, and four, five, or more may be counted in the same acinus. After the leucocytes have been removed, an empty space remains, with sharply cut borders, formed by hepatic cells in a state of fatty degeneration. The other cells of the liver are perfectly healthy. The capillaries of the liver separating the trabecular network are filled with white blood-globules; other white globules without and around the vessels seem to indicate their accumulation, with the result of forming small abscesses.

"On the other hand, one finds in the veins of the liver dark, granular, and non-adherent coagula; some in the central veins of the lobules, most of them in the branches of the vena portæ, which accompany between the acini the prolongations of Glisson's capsule. It is particularly in the neighborhood of these obliterated branches that small abscesses are met with. In some small arterial branches one observes masses of leucocytes, some of these elements being grouped around the vascular walls.

"If this description be applied to that of the pale anæmic spots, one will then have a complete table of the formation of metastatic abscesses by capillary embolism, from which it may be concluded that the colorless infarctions are certainly metastatic abscesses in process of evolution, and that the former arise in the following manner: Arrest in the capillaries, and sometimes in the small arteries, of white blood-globules brought by the hepatic arteries; coagulation of blood in the branches of the vena portæ; penetration into the hepatic veins of some white globules which have passed through the capillary network, and are retained by coagula of blood formed in these veins. Subsequently, during the evolution of these circulatory disturbances, passage of the white globules through the intermediate capillaries between the arterial and portal branches, on the one hand, and the branches of the hepatic vein on the other, and production of purulent infiltration; then small collections which are veritable abscesses, and which form by their union deposits more and more considerable in size.

"If one passes from the study of a special viscous to that of the totality of results furnished by a complete autopsy, it will be seen that the pyæmic capillary emboli coexist with the ordinary lesions of purulent infection, and especially with pulmonary abscesses, which leave no room for doubt concerning the anatomical diagnosis of pyæmia.

"But it is more important to know that the pulmonary lesions may be absent, or rather be represented merely by recent or very slight infarctions quite analogous to the small ecchymotic and apoplectic foci which are observed in cases of simple septicæmia.

"It appears to me, then, that the absence of metastatic abscesses does not suffice for rejecting pyæmia. In other terms, in the autopsies of individuals who have died after having presented symptoms of pyæmia one ought to seek not only for completely developed metastatic abscesses, but also for pale spots of recent infarction, lesions which require for their recognition an attentive examination, perhaps even the use of the microscope, and which may be passed unnoted, or be taken for fatty degeneration, or sometimes even for simple post-mortem changes."

ART. 155.—*M. Guérin's New Method of Dressing Wounds.*

(*The Lancet*, September 2.)

During the siege, the Paris surgeons were much grieved and disappointed at witnessing the utter failure which attended the attempts at amputation and

disarticulation, or the liberal use of the knife in any manner. In such cases a fatal result was almost sure to ensue, whatever the mode of dressing employed; and the surgeon was at a loss to discover what means to resort to for saving the patient's life. Attempts at conservative surgery were crowned with much comparative success; still the general results were very unsatisfactory, and the wits and abilities of the Paris surgeons were stretched to the utmost in their search after some safe mode of proceeding. It was quite obvious that the unsatisfactory character of all general hygienic conditions—the want of proper food, the moral state of the patients, depressed and disturbed by the events and emotions of the time, and the bad condition of the atmosphere—combined to entail this heavy mortality. The character of the wounds was also far more serious than had ever been observed under like circumstances; and the injuries inflicted by the cone-shaped bullet (tearing up the soft parts, splintering the bone in all directions, and causing extensive contusion of the marrow) necessarily brought on most disastrous consequences. The results of private practice were scarcely more favorable than those obtained in the wards of the hospitals; and this was observed to be the case as much during the reign of the Commune as during the German siege.

Towards the end of the Communal régime M. Alphonse Guérin, who had been previously much struck by the statements advanced by Pasteur, Tyndall, and others in regard to the dust and germ theory of disease, bethought him of applying a new mode of dressing founded on these doctrines. The starting-point of his inferences and experiments was simply the filtration of dust and germs through cotton, as illustrated by Tyndall's experiments. His first attempts were attended by moderately favorable results, but he has since completed and perfected his system with a success which deserves the attention of surgeons.

The *modus operandi* is extremely simple. It consists, if we take the dressing of an amputation for example, in wrapping the stump round and round with successive layers of cotton. A liberal use of the substance must be made, and several yards of cotton-wool successively disappear around the limb. It is quite obvious—to speak in the words of the surgeon of St. Louis—that the thick interposition of clothing is requisite to filter the air before it reaches the wound. It is not the less necessary to extend this dressing in all the directions of the limb, as foul or unfiltered air might find its way to the injured part. Thus, in amputation of the thigh, thick layers of cotton-wool are carried up to the hip and around the waist and the nates, so that all the approaches to the wound are carefully guarded in every direction. Coupled with this, M. Guérin exerts a gentle pressure over all the inclosed parts by means of ordinary cotton bands—a point to which he attaches great importance, as it enables him to tighten the whole appliance and to keep the parts snugly together.

This constitutes the entire proceeding. It may be observed that M. Guérin does not use carbolic acid in any way whatever. The wound is simply washed with camphorated alcohol after the operation. The surgeon's hands, the sponges, and instruments undergo no kind of preparation before the operation. The cotton-wool and cotton bands are steeped in no fluid.

M. Guérin lays great stress on the importance of carefully watching this dressing, which it is interesting to observe is intended to be a permanent one. He watches the dressing day by day, and never takes it off unless some extraordinary circumstance occurs, but contents himself with adding fresh layers of cotton-wool if he observes that it is in any way disturbed in such a manner as to permit of the introduction of unfiltered air into the wound. Thus the dressing may remain *in situ*, and does so in the great majority of cases, for twenty-five or thirty days. On removing the dressing after this lapse of time a healthy granulating surface is discovered, and half a wineglassful of healthy pus is found within the folds of the cotton. It may here be stated that M. Guérin, on applying a first dressing, stuffs up the stump with cotton-wool, which he introduces beneath the flaps. The process of granulation gradually drives out the cotton, and cicatrization takes place perfectly. Moreover, this mode of

dressings may be applied, and has been with great success, to extensively abraded and burnt surfaces.

Such are the details of M. Guérin's proceedings; and the results which have attended it—to be noticed presently—are deserving of much attention if we consider the mortality which habitually follows such operations in Paris, and which was especially formidable during the two sieges, and if we also take into account the fact that almost all M. Guérin's operations were for gunshot injuries.

M. Guérin has been exceedingly kind in taking us over his wards, in explaining the details of his procedure, and in stating the opinions he has formed on the subject. We were able to assist in his operating theatre at the undressing and redressing of four cases—a tedious process, which he might have deferred for several days, but which he very kindly carried out for the sole purpose of our benefit and instruction. Before entering, however, into a description of what we witnessed, we cannot do better than transcribe the following important statistical account of all M. Guérin's cases, for which we are indebted to M. Raoul Hervey, house-surgeon to M. Guérin:—

“The patients subjected to this method of dressing may be divided into three categories—the first including inexperienced attempts, the second that of progressive amelioration, and the third that of definitive perfection, which commenced after the collapse of the Commune.

“In the first category are to be found one amputation of the thigh, four resections, one disarticulation of the shoulder—in all, six patients operated upon, of whom three died. The patient whose thigh was amputated died on the twenty-fifth day, through secondary hemorrhage which was unavailingly combated by general and local treatment and ligature of the femoral artery. There was no purulent infection. Out of the four patients subjected to resection, two have recovered. In one, the acromio-clavicular arch, in another a large portion of the radius, had been taken away. Of the two fatal cases, one was resection of the ulna. This patient was able to get up on the tenth, eleventh, and twelfth days after the operation. On this last day he was, in compliance with his urgent request, dressed in the wards, where purulent infection was prevalent, instead of in the operating theatre. On the evening of the same day he had a rigor, and a very few days after he died of pyæmia. The other had been subjected to resection of the humerus, and the preservation of the caput humeri did perhaps play a certain part in the unfortunate result which ensued. Lastly, the case of disarticulation of the humerus has recovered; it had been absolutely impossible to find enough flesh for making flaps.

“The second category includes thirty-five patients who underwent large amputations. From one of them the two forearms had to be taken away. Eleven were amputations of the thigh.

“It is to be noticed that among them was a child of five months, for whom no nurse could be procured, and another was a man so completely drained of blood that we feared to administer chloroform; death supervened a few hours after the operation. These cannot, therefore, be taken into account, and, out of the remaining nine, on this day six are doing extremely well.

“Of the other patients, the following (belonging to the same series) have survived: five amputations of the leg out of eleven, four amputations of the arm out of six, two disarticulations of the shoulder out of two, and two amputations of the forearm (including the double amputation) out of four; making a total of thirty-four cases of amputation, of whom nineteen survive.

“Among the fifteen fatal cases were the child already alluded to; the exsanguineous subject; an amputation of the thigh, in which case the post-mortem revealed the presence of no metastatic abscesses; a case of amputation of the leg, and one of the thigh, in which the stump had been manifestly exposed to air in wards which were then poisoned with a purulent infection; two cases of tetanus; an amputation of the forearm in a man aged seventy, and one of a leg, in which the operation was performed too late on inflamed parts.

“As regards the six remaining cases (three amputations of the leg, one of the thigh, and one of the forearm), they were removed from M. Guérin's surveillance to be sent away into other wards or to their homes, and cannot be

answered for, as the least disturbance in dressing the parts may lead to penetration of air and fatal consequences.

"To this second series are attached several remarkable cases of conservative surgery. One was a child in which the splinter of a shell had taken away the left buttock, contused the great trochanter, fractured the iliac ridge near the antero-inferior iliac process, and cut down a large portion of the left abdominal parietes, so as to justify apprehensions that the peritoneum was injured. Immediate application of the dressing was made. Symptoms of peritonitis were exhibited during the two following days; but the case is now almost completely cured after three dressings.

"Then may be noted a gunshot wound in the hand, with fracture of two metacarpal bones. Twenty-one days after the first dressing, the necrosed fragments of bone were found to be completely eliminated. In another case there was abrasion of the whole deltoid, with injury to the acromion, in a man of fifty-five years, who recovered. Lastly, three cases of conservation of the foot, where the tibio-tarsal articulation had been more or less injured by gunshot wounds, may be quoted.

"The third and last category includes two amputations of the thigh and two cases of conservative surgery. These were, first, a wound on the hand without fracture, produced by the explosion of a powder-bag; and, secondly, denudation of the patella without fracture. Both healed very rapidly. One of the amputations of the thigh was a very bad case, complicated by fracture of the femur, open fracture of the clavicle, and a large eschar on the sacrum. Besides that the operation was performed only on the thirty-first day, it was necessary to excise a portion of the femur. Though there were multiple sources of infection, death only occurred eighteen days after the operation, without leaving any traces of purulent infection. The other case was one of a strumous lad, who is now doing well, whilst before the operation hectic had already set in, with vomiting, clammy sweats, &c. The temperature fell from 39° Cent. to 37°."

To this detailed account of M. Guérin's cases it remains only to add that the four cases which were undressed in our presence, and which were all doing well, were gunshot wounds. One was a case of amputation of the thigh in a woman aged thirty; another an amputation of the shoulder in a lad of eleven; and two of conservation of the foot, as already referred to in the preceding account. The patients did not complain of heat or pain in the wound. The stumps looked nice and tight, and the surface was either already healed or granulating.

To conclude: some of the Parisian surgeons are already experimenting with M. Guérin's method, with what result is not yet known.

ART. 156.—*On the Treatment of Fractures of the Limbs in Gunshot Injuries.*

By Dr. SÉDILLOT.

(*Archives Générales de Médecine*, Nos. 1, 2; 1871.)

"1. The influence of hygienic agents, more powerful in the pathological than the healthy condition, explains most of the divergences of military surgery. By placing one's self therefore at this superior point of view, one will be able to establish general doctrines and to discover the most rational and sure means of treatment.

"2. It is necessary in all clinical observations to mention, in addition to ordinary details, the locality, the season, the degree of atmospheric purity, the mode of alimentation, the conditions of the dissemination and collection of patients, and other circumstances capable of modifying the results of operations and the means of treatment.

"3. The unhealthiness of places from vitiation of the air or any other cause does not act solely upon the surface of wounds, but affects the whole economy, and modifies either primarily or consecutively its composition and vitality.

These two varieties have to be studied in order to enable one to distinguish and specify their effects and treatment.

"4. The dissemination of wounded soldiers might be favored in a general way by the principle that an indemnity should be claimed from non-combatants. Every citizen ought to be called upon to take part in the charges and dangers of war, and it is indispensable that generosity and self-sacrifice should be independent of egoism.

"5. The use of more or less aeration exercises a considerable influence upon wounded persons and patients placed in hospitals. Men who generally live in a confined air suffer less than those who live in a free air.

"6. The most simple and ready precepts and means of treatment, and those the utility of which is most universally recognized, ought to be particularly recommended in the surgery of war, on account of the multitude of wounds and the usual absence or insufficiency of resources.

"7. The condition of the organism, considered in its totality or in its parts, ought to constitute the basis of the principal curative indications.

"8. The nature of projectiles explains certain apparent contradictions in therapeutical results. Concussion, contusion, and profound attrition of the tissues by balls and pieces of shell render the preservation of limbs more difficult than the results of wounds from bullets, the course and more limited action of which less frequently necessitate amputation.

"9. The exit-wounds of bullets are larger than those of entrance, and they generally close later—a condition due to the declivity of the wounded limb and the flow of blood.

"10. The benefits, in the health of troops, of a life under canvas, and the bad effects of crowding in casernes, hospitals, and barracks, seem very important reasons for treating the wounded during summer in galleries, open on one side at least, which is protected by a curtain.

"11. The chief indication is to place as far as possible the patients in free air, taking care at the same time to protect them from rain, draughts, and the sun. During winter the temperature should be raised by large stoves and hot-water pipes. The most sure means of keeping up and establishing health, and of strengthening the organization and development of men, as of all other living beings, is to place them as far as possible in free air, or in air which is sufficiently often renewed to remain in a condition of almost complete purity.

"12. The dissemination of wounded persons in private houses for the purpose of avoiding infection and crowding, is a measure which seems to be demanded both by humanity and science.

"13. The impossibility of maintaining a military health corps sufficiently strong for all the exigencies of war necessitates an appeal for the assistance of civil practitioners.

"14. The most elementary sense teaches that in cases of fracture, *conservation* is the most rational and most advantageous end to pursue, and that in cases where the sacrifice of a limb is inevitable it is better to remove a portion than the whole.

"15. The doctrine of the conservation of limbs fractured by gunshot wounds belongs entirely to the Academy of Surgery, and has never been contested in its principle. The applications only have given rise to differences of opinion, which still last, and will never disappear, since they depend on personal appreciations.

"16. The advantage of preserving a limb may counterbalance some chances of life; thus many patients prefer to run the risk of a conservative treatment rather than submit to an operation which would certainly lengthen their days.

"17. The hand and thigh are limbs whose conservation is of the greatest importance.

"18. Conservation of a thigh fractured by a ball is attended in a general manner by greater success than amputation, whatever be the period at which this operation is performed. Better established and more numerous statistics will enable us to state with precision the proportional results of these two kinds of treatment.

"19. The higher the seat of fracture, the more advantageous is conservative treatment of the thigh than amputation of the limb.

"20. Conservation of the thigh is generally attended with more prompt recovery than amputation.

"21. The gravity of wounds depends (a) on their extent; (b) on the time necessary for their consolidation; (c) on the number and importance of the affected tissues; (d) on the seat of the lesions; (e) on the causes by which they have been produced; (f) on the accidents to which they are exposed; (g) and, above all, success or the reverse of treatment is decided by the purity of the surrounding air and other hygienic conditions.

"22. As the smallest wounds, all other things being equal, heal with the greatest rapidity, it is evident that those proceedings of amputation and resection are the best which cause the least amount of injury. One's judgment ought to rest upon this basis in making the choice between conservation of a limb, amputation, or resection; there is no doubt that a limb fractured by a ball presents much less of wounded surface than a recent stump.

"23. The greater the wound, the more dangerous it is on exposure to contagion, inflammation, absorption, infection, and all their local and constitutional consequences. The gravity also of a wound is proportional to its duration, which augments and increases the dangers. Hence the indication to deal with the injury as soon as possible, and by means, such as superficial and deep sutures, position, immobility of the limb, and other surgical resources, to endeavor to bring about immediate union and occlusion.

"24. The number and importance of the divided organs and tissues merit serious attention with regard to the indications and the choice of treatment. Amputation, which involves the whole thickness of a limb, nerves, vessels, muscles, and skin, is much more formidable than conservation, by reason of the small amount of destruction produced by the progress of a bullet compared with that caused by the operation. Resections, which constitute a kind of partial conservation, are subject to the same remark.

"25. Larrey is the veritable author of the treatment which consists in the occlusion and immobilization of gunshot fractures complicated by wounds.

"26. Splints of wadding and plaster seem to be especially applicable for the immediate treatment of gunshot fractures. Plaster splints placed directly over the well-shaven skin, without intervening elastic substance, seem to be more particularly indicated after the inflammatory fever, and when the primary swelling has disappeared.

"27. The seat of wounds is of great importance. The following are the two stages: 1st, that of infectious and gangrenous inflammatory diffusion; and, 2d, that of localized and curative suppuration.

"28. A great number of cases of recovery after conservation from bullet-wounds of the knee with more or less profound erosion of bones and opening of the synovial membrane, seem to contra-indicate the generally admitted precept that amputation in such cases ought to be resorted to.

"If one thinks of the bad results and the rare successes of amputation of the thigh, it is an important question whether the operation should not be reserved for those injuries in which there is much breaking up of bone with separation of the condyles.

"29. The reparative rapidity of osteogeny after gunshot fractures seems to contra-indicate the majority of operations undertaken upon the foot and hand when the disorders and bad results are not very considerable. The still adherent spiculæ and the osseous surfaces are absorbed, or very soon covered by granulations, and are united by deposits of new formation. Anchyloses by fusion replace the articular surfaces and terminate in cure after the elimination of necrosed parts.

"30. The activity of osteogeny in gunshot fractures explains the rarity of pseudarthroses. The immobility of the limb is made sure by the abundance of osseous deposit, and callus is readily deposited even when the patients perform extensive movements of the limbs.

"31. The precept of avoiding the retention of fluids in wounds, and of favoring pus-discharge, has been followed with great advantage. By this practice

one may prevent inflammatory swelling, phlebitis, angeioleucitis, erysipelas, and other infectious manifestations. It seems to me, however, when the patient is exposed to the dangers of contagion and of absorption, to be less dangerous to close the wounds so as to let the pus escape only by very small openings, in order to prevent the introduction of air into the centre of suppuration.

"32. In all cases of doubt concerning the necessity of amputation, conservation of the limb ought to be attempted.

"33. When an amputation is indispensable, it should be performed immediately, or within the first twenty-four hours, before the appearance of fever.

"34. The superior and undisputed advantages of primary or immediate operations demand the establishing in ambulances a division of operative manœuvres and reliefs, so that a surgeon can practise at least one hundred amputations on the field of battle in the first twenty-four hours.

"35. The influence of air and other hygienic agents on the results of primary, secondary, and tertiary amputations, requires to be studied afresh. It seems probable that with better conditions of aeration secondary amputations will be attended with less danger.

"36. Secondary amputations being always practised at the period of inflammatory accidents, and at the time when the patient is subjected to infectious emanations and the dangers of overcrowding, seem to acquire most of their gravity from these conditions.

"37. The success attributed to tertiary amputations is explained in part by the better sanitary condition of hospitals and barracks which have been freed by death of crowding and infection. Those amputations that have been performed under hygienic conditions as unsatisfactory as those of secondary amputations, do not appear to have given more advantageous results.

"38. There ought to be a distinction made in secondary amputations, according whether they are performed upon a segment of a limb exempt from or involved by inflammatory affections. Thus, an amputation of the leg made on the tenth day from the accident at a place of election for a comminuted fracture of both bones of the limb in its inferior third, with extensive tumefaction as far as the knee, would be more severe than the same operation performed at the same time and at the same situation for a comminuted fracture of the foot without complications to the leg itself.

"39. The greatest danger of secondary amputation proceeds from swelling, induration, and increased vascularity of the tissues, together with the resulting primary and secondary modifications. When amputation is performed on a non-inflamed arm or leg for a lesion of the forearm or foot, the operation may be considered, up to a certain point, as one belonging to the primary operations, and consequently less formidable.

"40. Tertiary, like secondary amputations, are subject to the influences of aeration and agents of hygiene, the action of which ought to be well studied.

"41. The diminished size of the arm at the insertion of the deltoid, and the disposition of the triceps, biceps, and coraco-brachialis muscles, seem to me to explain the greater success of amputations which are practised here. Those made at the middle or inferior third of the arm, divide the brachialis anticus, and leave in the stump the folded and non-adherent bands of the long portion of the biceps and a part of the triceps, and cicatrization is thus rendered most tardy.

"42. There can be no doubt that amputations of the thigh, leaving a conical stump, that is to say, presenting an osseous projection beyond the soft parts, do not expose the patient to primary bad results so much as amputations made according to the rules of art, when the bone is deeply seated under the flaps.

"43. Complete fractures, with large spiculæ, and involving both bones of the leg, require amputation which is attended with success much more frequently than conservation attempted under these pathological conditions.

"44. Fractures of one bone only of the leg, do not require amputation, except in cases altogether exceptional, and in the presence of supposed incurable complications.

"45. Fractures of the anterior part of the leg, by a ball which has not at-

tacked the posterior part, seem to be more susceptible of conservation and cure than those produced by the passage of the ball from before backwards, notwithstanding the greater apparent possibility in the latter case of a free discharge of pus.

"46. In the majority of amputations, divided diaphyses inflame, are absorbed either wholly or partially over a great extent, and are surrounded by newly-formed masses of ossification. The osteogenetic process is sometimes so rapid that one feels in the thickness of the stump, osseous deposits which may be readily mistaken for lost spiculæ left in the centre of the flaps. Sometimes the old bone becomes partially necrosed and gives rise to the formation of deep-seated abscesses, the tracks of which are represented by veritable cloacæ, which traverse the new bone, and establish fistulous passages. These abscesses require to be treated by direct puncture, and the fistulæ by frequent dilatation and detersive injections. The small free sequestræ which keep up the bad symptoms should be extracted.

"47. When patients thus affected with invaginated osteitis are placed under good hygienic conditions, their recovery may be hoped for. In contrary cases they generally succumb to infectious complications.

"48. The resection of diaphyses affected with necrosis to a great length along the seat of previous amputation, is indicated in cases where a large and raised sequestrum seems to be firmly fixed to the old bone, and where it is the cause of symptoms dangerous to life. Where there are signs of speedy elimination, and no longer of complications, expectation is the most promising course.

"49. If the bone, covered by granulations, projects beyond the integument, but opposes the formation of a solid and persistent cicatrix, the surrounding tissues should be separated by means of Conquon's paste or of the electric cautery, and the bone resected as in the preceding case, without interfering with the vessels and nerves of the inodular tissue. The later the period of operation, the more certain is the prospect of success.

"50. The absorption of the osseous extremities left by amputation, and their transformation into granulating surfaces, which are soon continuous with those of the surrounding soft parts, in such a manner as to form a single homogeneous and adherent fibrous tissue, explains the possibility of making the stump a point of support during standing and walking, and shows the advantage of taking up in the flaps healthy integument and sufficient fibrous tissue to cover the ends of the bones. These parts, under the influence of repeated pressure, are thickened by a fibro-fatty deposit similar to that of the heel.

"51. Fixing the heel in an apparatus drawn forwards and upwards by an elastic band fastened in front of the leg, seems to be necessary in the dressing of the limb after Pirogoff's amputation at the ankle-joint. This operation does not readily result in osseous ankylosis when the calcaneum is abandoned to the backward and upward traction of the tendo Achillis.

"52. When the extremity of the stump is not required to support much pressure, as in the arm, forearm, and upper part of the leg, it is of less importance whether the cicatrix be placed directly over the end of the bone, and whether there be much or little vascular tissue. In the thigh, the skin with a thick fibro-fatty deposit and the surrounding aponeurosis should be adherent to and continuous with the extremity of the bone, so as to form a veritable heel capable of bearing the weight of the body.

"53. Metastatic abscess of the lungs and other organs, and effusions of the same nature, require, in addition to the suppression of their causes, an essentially tonic régime and medicinal treatment. Wine and stimulants are necessary to support the strength of the patient, and quinine acts with the greatest efficacy against rigor and fever.

"54. Great advantage will be derived from closing wards and rooms in which symptoms of infection have been manifested. Pyæmia is endemic, and threatens all wounded subjects who reside in places where it has appeared; every patient affected with symptoms of purulent absorption ought to be immediately removed to a fresh place, and be there isolated.

"55. Although resection may be one of the best and most felicitous re-

sources of modern surgery, much good has not yet been derived from this proceeding in the wounds of war, in which it seemed adapted for rendering very great service. The absence of favorable hygienic conditions, the want of apparatus, the absence of sufficient and continuous care, and slowness of the progress towards recovery, explain this lamentable fact, which, it is to be hoped, is only a temporary and transitory one.

"56. Resections of the ankle, the knee, the hip, the wrist, and the elbow almost constantly failed. Those of the head of the humerus have been attended with some successes, which would certainly have been more numerous under better conditions of aeration.

"57. It is indicated in resection of the head and upper extremity of the humerus to give to the limb, the length of which is to be measured, a vertical situation parallel to the corresponding part of the chest, so that the arm be neither too long nor too short. In the former case, the soft parts at the point corresponding to the resection are stretched and rendered thin, impeding the circulation by compression of the vessels and diminution of their calibre; in the latter, the same effects are the result of folding of the soft tissues, and, at the same time, the diaphysis is carried against the wound or glenoid cavity, and causes irritation and ulceration.

"58. The extent to which one may remove the extremity of the humerus is a question for study. If the two tuberosities be cut away, the diaphysis is supported by the deltoid, the pectoral muscles, the latissimus dorsi, the coracobrachialis, the biceps, and the long portion of the triceps, so long as the coracoid apophysis, the acromion process, and the glenoid cavity remain intact. These are very important operative conditions to examine, and I think that unless the circumstances be very favorable, it would be imprudent to place the saw below the superior edges of the tendons of the latissimus dorsi and pectoral muscles."

ART. 157.—*Antisepticity in Surgery.*¹

By EDWARD LUND, F.R.C.S.

(*British Medical Journal*, August 24.)

It was argued by the author that antisepticity might be brought about by any means through which the *excreta* of wounds were protected from putrefactive change, and the surfaces on which they rested preserved from contact with the irritating chemical products thus elaborated. In recent wounds, the strict observance of antisepticity saved much constitutional distress, tended to keep the tissues from loss of substance by sloughing and ulceration, and the patient's strength from being reduced by needless suppuration. But, in healing wounds, it was admitted that greater time would be often required to complete a perfect cicatrix; although this, when formed, would be more pliable and natural than under other modes of treatment. The claims of many antiseptics were considered, but preference was given to carbolic acid in very weak solution, or in that form of composition which Mr. Lister has described as his carbolized muslin, a modification of the antiseptic cere-cloth, first proposed by Mr. Lund at the meeting of the Association at Leeds in 1869. The president (Mr. May) said that the antiseptic plan of treatment was adopted at the Royal Albert Hospital, Devonport, with satisfactory results.

ART. 158.—*On Purulent Infection.*

By M. JULES GUÉRIN.

(*Archives Générales de Médecine*, No. 2, 1871.)

The following remarks were made by M. Guérin in the course of a discussion at the Academy of Medicine of France:—

¹ Read at the 84th Annual Meeting of the British Medical Association.

Starting from the principle of the immediate organization of wounds produced and maintained free from the contact of air, M. Guérin endeavors to establish those conditions that precede or excite the phenomenon of the suppuration of wounds, and those which may cause it to vary either in degree or manner, or finally in the various complications of which it is susceptible.

These conditions or factors M. Guérin collects under the title of the etiological formula of pyogeny, which, according to him, comprehends six terms:—

1. The general action of the air as a primary and also remote cause of the phenomenon.

And as immediate causes:—

2. The local organic action of air modifying slightly the nervosity and vascularity of the surface of wounds, and, as a consequence of this modification, producing an adequate modifying change of the secreted products.

3. The chemical action of the air modifying secondarily the products effused on the surface of the wounds and the most superficial parts of the surface itself.

4. The mechanical action of the atmospheric pressure as an obstacle to the discharge of secreted products, and as an auxiliary cause of the reabsorption of these products.

5. Atmospheric ferments acting as modifying agents of the process and products of suppuration.

6. Finally, the activity and spontaneity of the organism as completing, multiplying, and diversifying the action of the factors of the suppuration of exposed wounds.

This formula of suppuration, states M. Guérin, is destined to unite in an uninterrupted etiological series the different conditions comprised under the terms traumatic fever, purulent absorption, septicæmia, pyæmia, purulent infection, putrid infection; and, with regard to the different terms of the etiological formula, one may consider the different corresponding manifestations of normal or perverted suppuration.

Having established these etiological principles, M. Guérin proceeds to the study of pus, which he regards as “a product emanating directly from the blood, some of the elements of which have disappeared, and others have been modified.” He distinguishes normal physiological pus and altered pus. Physiological pus is that which is produced beyond the contact of air, which is formed without any specific complication, which may be reabsorbed without any bad consequence, and which without danger may be moved and circulate with blood. Such is the pus of cold abscesses, of abscesses by congestion, which may be seen to disappear by absorption without giving rise to any bad symptom.

The morbid changes of pus of which chemistry has not yet been able to give any account are recognized directly by physical observation, indirectly by experimentation and by clinical observation. M. Guérin lays it down as a fact that all pus exposed to the air for some time is altered pus; it is a common notion that air acts as a decomposing agent upon all organic products, and that pus does not constitute an exception to this rule.

But the changes of which pus is susceptible differ in mode and in degree. Under the influence of atmospheric ferments, and under the influence of the activity of the organism, and itself in possession of a specific element of impurity, pus is susceptible of undergoing various changes of a different character. Finally, whatever it may be, this mode of morbid change is recognizable in all degrees from the utmost imperceptible alteration either in appearance or odor to the most complete putrid decomposition. But, in these different conditions, it is less from chemistry than from the organism itself that it is necessary to demand the proper reagent for revealing and rendering appreciable the nature and degree of this change. It should be stated that at the early stage of pyogenesis the most superficial parts of the cut surface die, and are detached, to become mingled with the fluids secreted by the wound.

Altered pus has at the same time a local and a general influence. Locally it acts upon the vessels and the nerves of the wound, and from this action results an exaggeration of the purulent secretion, and often an increase of absorption.

In every suppurating wound there is an uninterrupted double movement of production and removal, and consequently an incessant penetration of the purulent fluid secreted from and poured over the surface of the wound—a penetration which carries into the circulating current that which originally was on the surface of the wound. The general action which results from the penetration into the organism of the altered elements of pus is marked by a series of pathological reactions, which individual observations have disjoined, but which etiological considerations unite and bind together.

After having considered the different phenomena to which the entrance of pus into the organism may give rise, M. Guérin justifies the new term of purulent intoxication which he has substituted for septicæmia and purulent absorption or infection. It was necessary, he thinks, to find some term which would comprehend all the special cases which have been alluded to, and then this does not, as all the others, include in a single order of phenomena the very numerous and complex phenomena of purulent intoxication.

M. Guérin then deduces from the inevitable change of the products secreted on the surface of an exposed wound, and from the continuous absorption of these products, the consequence that the whole organism undergoes without interruption all the effects of this contact. Then, where other authors recognize distinct affections, as traumatic fever, septicæmia, purulent or putrid infection and absorption, he sees but one, the evolution of which presents different stages and forms in relation to the various conditions alluded to in the etiological formula, but the unity of which is incessantly revealed by unequivocal characters.

Purulent intoxications ought, according to M. Guérin, to be distinguished as simple or compound; the former are those which result from the absorption of the elements of pus subjected simply to the action of air; the second result from the same kind of absorption, but in individuals who were previously the subjects of some pathological condition; or again the healthy pus may be mixed with other pus changed by heterogeneous elements derived from without. For example, purulent intoxication, which is developed in an otherwise healthy individual in consequence of an accidental wound or an operation, and purulent intoxication manifested during an attack of confluent variola, cannot be regarded as produced by the same septic agent.

Among the phenomena of simple purulent intoxication figures traumatic fever. But is this fever always the result of an absorption of normal pus? M. Guérin does not think thus; the fever presented at first by wounded subjects may be explained by the reaction of the neuro-vascular element of the wound; localized at first, it may become general, but this fever cannot be attributed to the absorption of pus until after some days, when the sero-sanguinolent discharge from the wound has given place to a veritable suppuration.

M. Guérin refuses to attribute to this absorption of simple pus anything more than this so-called traumatic fever; he distinguishes from this the symptoms which belong to purulent absorption.

But when to a simple change in pus is added the action of ferments present in the air, or of ferments in the organism, one has to deal with compound intoxication. By ferments in the organism M. Guérin designates the morbid elements which result from cachexia and from acquired or hereditary diathesis. These compound intoxications result then from the absorption of physiological and pathological fluids from the wound.

M. Guérin then endeavors to demonstrate that the symptoms presented in this last condition cannot be separated under various names, but that there exists a continuous morbid condition of which the supposed septicæmia and the supposed purulent infection are but the exaggeration. He shows that even before the appearance of the characteristic phenomena which belong to these accidents, premonitory symptoms are observed which are a slight form of the affection.

At an advanced period of the intoxication suppurating wounds of a bad character give off vapors holding in suspension particles of toxical pus. These emanations may corrupt the atmosphere. In this sense, but in this alone, purulent intoxication may approach to miasmatic infections.

Considering, finally, the local lesions to which purulent intoxication may give

rise, the so-called metastatic abscesses, M. Guérin sees nothing more here than the extension and distribution of the toxic element. He acknowledges that the pulmonary infarctions and abscesses undoubtedly result from embolia; but it is difficult to account in this way for those in other parts of the body, especially in the cellular tissue and the joints. M. Guérin is disposed to attribute them to migrations of purulent particles which pass through the cellular tissue into the other tissues of the body.

From the above considerations M. Guérin draws the following conclusions:—

1. That the morbid changes in fluids secreted by exposed wounds are of two kinds—simple and of the same nature when they result exclusively from the fermentation and the putrefaction of physiological elements; complex and of a variable nature when the morbid change involves at once both physiological and pathological elements.

2. That the fluids of wounds, in whatever state of decomposition and alteration they may be found, become submitted to the laws of absorption, which cause them to penetrate incessantly into the organism.

3. That this absorption, when it affects only physiological fluids in process of decomposition, gives rise to merely simple traumatic fever, but when it acts upon altered physiological and pathological fluids, it gives rise to an uninterrupted series of bad symptoms, which accord with the mode and degree of this change.

4. That it is by overlooking the persistence of absorption, and by breaking the continuity of the reactions which it causes, one is led to consider *septicæmia* and *purulent absorption* as isolated and separate facts, although indeed they are but the accidents of this continuity.

5. That anteriorly to the periods hitherto assigned to the manifestation of septicæmia and of pyæmia there is a premonitory period in which the effects of absorption and of purulent intoxication are presented in a reduced form: all forms realize different but continuous degrees of intoxication.

6. That the co-operation of the organism in the development of purulent intoxication consists in the addition of the peculiar ferments, and in their fecundation, multiplication, and the increase of their intensity.

ART. 159.—On *Purulent Infection*.

By M. ALPHONSE GUÉRIN.

(*Gazette Hebdomadaire*, No. 19, 1871.)

The following conclusions were given at the end of a long address before the Academy of Medicine, Paris:—

1. The affection which we designate as *purulent infection* or *pyæmia*, ought to be called *surgical typhus*.

2. Like all the other forms of typhus with which it has the greatest analogy, surgical typhus is the result of blood-poisoning.

3. This poisoning proceeds from the absorption of deleterious miasms engendered at the surface of wounds.

4. It gives rise to the formation of metastatic abscesses, and produces a lesion which has been described under the name of infarctions.

5. These infarctions, like abscesses, proceed from the action of the poison on the tissues where they are developed.

6. Although by experiments in which the circulation is obstructed by injections into the veins, one may produce abscesses and infarctions, still it is not right to maintain that these lesions cannot result from the influence of miasmatic emanations acting during life upon those parts of the body in which they are afterwards found.

7. Surgical typhus is an essentially different disease from putrid infection.

8. These two affections, although different, belong to the class of septicæmia.

9. Traumatic fever ought not to be ranked in the same class. There is nothing to show that this affection results, as has been maintained, from the absorption of a poison.

10. Surgical typhus is an infectious disease; that is, it is contagious by the air.

11. The poisoning agent cannot yet be designated except by the vague term of *miasm*.

What has been described under the name of sulphate of sepsine seems to be nothing more than a material acting like all putrid substances. /

12. Sulphate of sepsine has been found in yeast.

13. In order to prevent or hinder the production of surgical typhus, one ought, when the patients cannot be isolated, to guard the wounds from the contact of contaminated air.

Dressing with cotton-wool seems to be the most certain means of attaining this end.

14. When surgical typhus exists, the best medicinal agent is sulphate of quinine, given in doses varying from two to four grammes.

ART. 160.—*On Changes in Pus.*¹

By M. JULES GUÉRIN.

(*Gazette Hebdomadaire*, No. 20, 1871.)

"As chemistry is not sufficiently advanced to furnish us with any account of the various changes and transformations of which pus is susceptible, we are obliged to restrict our attention directly to physical observation and indirectly to clinical observation.

"It will be acknowledged that all pus, after it has been exposed for some time, whether the patient is feverish or not, is altered. To prove this it will suffice to bear in mind what occurs when a chronic abscess has been opened by the direct method. The abscess and the pus, which for a long time have remained inoffensive, excite, on exposure to the air, a set of symptoms which contrast singularly with the previous inoffensive calm which had persisted for whole months whilst the pus remained subcutaneous. What has occurred to bring about so rapid a change? The contact of the air has been sufficient to modify the organ and to alter the product. By its penetration into the cavity of the abscess and its contact with the pus, it has converted a physiological into a pathological product. Some persons are disposed to recognize in this double fact the result of inflammation propagated from the external opening to the walls surrounding the purulent collection; but it should be remembered that when care has been taken to make the external opening according to the rules of the strictly subcutaneous method, inflammation never passes beyond the point where this opening has been made. It is a common notion that air acts as an agent of decomposition on all organic products, including pus. With regard to the influence of air upon the walls of the purulent sac, this is a special case of the great law of the influence of air upon all exposed wounds.

"The changes of which pus is susceptible differ in their *modes* and *degrees* under the influence of atmospheric ferments and the influence of the activity of the organism which is itself in possession of specific elements of impurity. But as the pus itself is but the more advanced transformation of the fluids originally excreted by the wound, one may, in order not to establish between the different degrees of this transformation an arbitrary solution of continuity, consider these degrees as a single process exercising at different periods and in different degrees a local and general influence which varies according to these periods and these degrees, but is one and identical in its essence. But what is this local and what this general influence?

"Locally the contact of altered fluids produces two effects upon the sensible elements the vessels, and the nerves of a wound. The former, according to the nature of the alteration, either maintains or causes to cease the constriction of the vascular orifices, and consequently obliterates or opens these. The second is, that the contact of the altered fluid becomes the incessant and very

¹ Communicated to the Académie de Médecine, Paris.

active cause of abnormal and purulent super-secretion. The contact of pus excites pus. But, at the time that the orifices of the afferent vessels thus stimulated continue to pour out in abundance fresh quantities of purulent or pseudo-purulent fluids which are mixed with the pre-existent pus, the efferent vessels become filled with the fluid by which they are bathed. This fluid, under the influence of the atmospheric pressure, incessantly insinuates itself into the open canals, and carries with it all the elements of which it is composed; unless, however, the vascular extremities still remain in the condition of contraction which characterizes the first period of organic paralysis, in which case absorption does not take place either by imbibition or by endosmosis.

"There is then, I hold, in every suppurating wound an uninterrupted double movement of supply and removal, and consequently an incessant penetration of the purulent fluid secreted and poured out at the surface of the wound; a penetration which carries far into the circulating torrent that which originally existed on the open surface. This capital fact is rendered certain by an experiment which I have repeated many times, and which has enabled me to establish that absorption—the mechanism of which process in physiology is still a matter of conjecture—is veritably the effect of atmospheric pressure acting upon surfaces folded into spaces at a tension less than the surrounding tension. But, in applying this entirely experimental datum to the mechanism of the absorption of fluids spread over the surface of wounds, it should not be forgotten that this absorption must be constant and uninterrupted, and that it establishes, as has been stated, a continual exchange between the local products of the wound and the circulating torrent which by turns supplies and receives these products.

"The first and immediate consequence of this order of occurrences is that the fluid produced and poured out on the surface of the wound, as well as those which stagnate there, of whatever nature they may be, and whatever degree of change they may have undergone, penetrate incessantly into the organism and introduce there the morbid elements with which they have been impregnated."

SECT. II.—SPECIAL QUESTIONS IN SURGERY.

(A) CONCERNING THE HEAD AND NECK.

ART. 161.—*Treatment of Granular Ophthalmia by the Local Use of Quinine (Quinix Bisulphas).*

By C. BADER, Ophthalmic Assistant-Surgeon, Guy's Hospital.

(*The Lancet*, October 28.)

The unsatisfactory results of the treatment of granular ophthalmia, especially if combined with pannus (vascular cornea), will, Mr. Bader hopes, justify the publication of the following remarks. Experiments were made with various substances on patients suffering from granular ophthalmia with pannus. The idea which led to the selection of the substances experimented with was, that granular ophthalmia is the result of some extraneous substance becoming lodged in the conjunctiva, and giving rise to what have been called granulations. Experiments made elsewhere with antiseptics on organic matter have shown quinine to be one of the most effective antiseptics.

The substances experimented with on granular ophthalmia were the scrapings and juice of the root of bryonia nigra, the nitric oxide of mercury ointment (hydrarg. nitrico-oxidi, gr. iij, adipis 3j), and the bisulphate of quinine in powder. The remedies were applied morning and evening; of the quinine about as much as would go on the point of a penknife was placed, with a dry camel-hair brush, on the inner surface of each lower eyelid. No other treatment, such as exclusion from light, use of lotions, &c., was made use of. The hypothesis that quinine acts specifically upon granulations, as mercury, for instance, does on lice, may be erroneous; the effect may merely be that of an irritant, causing moderate suppuration, and, with it, removal of the granulations.

The effects on granular conjunctiva of bryonia nigra and of the nitric oxide of mercury ointment, though curious in other respects, are of little interest here. Suffice it to state those of quinine. In some cases its application was followed by severe smarting, which continued for ten or fifteen minutes; in other cases no pain whatever was felt; in all cases appeared increased purulent discharge from the conjunctiva, with shrinking of the granulations and clearing of the surface of the cornea. The intolerance of light ceased rapidly in all cases; the dilatation of the pupils appeared in from twelve to twenty-four hours after the first application of quinine. The pupils, though dilated in ordinary light, contracted well on exposure to strong light.

CASE 1.—A. B., aged fourteen. Granular ophthalmia for six years; at present vascular cornea (pannus) in both eyes; pupils barely visible; granular conjunctiva; extreme intolerance of light. The application of bryonia nigra was followed by symptoms of purulent ophthalmia (chemosis, swollen lids, &c.), which, with slight improvement of sight, subsided within ten days; the intolerance of light persisted. Quinine was used and the bryonia discontinued. The eyes improved rapidly; the granulations became smaller, and the intolerance of light disappeared completely within four days.

CASE 2.—C. D., aged ten. Granular ophthalmia with pannus for two years, with intolerance of light. The use of the nitric oxide of mercury ointment (for fourteen days) was followed by slight improvement. It was discontinued and quinine substituted. Within ten days all intolerance of light had ceased, and the cornea became much clearer, &c.

CASE 3.—E. F., aged ten. Granular ophthalmia for one year. The intolerance of light persisted for three weeks while the nitric oxide of mercury ointment was used; it disappeared on the second day after the quinine had been applied.

CASE 4.—G. H., aged thirty-four. Granular ophthalmia for one year, with pannus and intolerance of light. Quinine was used for ten days; on the third day the pupils became dilated, and on the fourth all intolerance of light had ceased.

CASE 5.—I. J., aged eleven. Granular ophthalmia for four months, with slight pannus and intolerance of light. Quinine treatment for three weeks. All intolerance ceased; cornea much clearer; granulations red, much smaller; slight purulent discharge.

Case 6, aged fourteen, bad for three months; Case 7, aged fifteen, bad for four years; Case 8, aged ten, bad for two years, improved equally rapidly under the quinine treatment; in all did the intolerance of light disappear within from five to ten days, with marked improvement in the state of conjunctiva and cornea.

ART. 162.—*Anæsthesia of the Cornea, and Concurrent Diminution of the Action of Atropia on the Iris, as influencing Keratic Ulceration.*

By J. S. HILDBETH, M.D., Clinical Lecturer on the Eye and Ear at the County Hospital, Chicago.

(*Archives of Ophthalmology and Otology*, vol. i. No. 2.)

From a series of observations upon this subject, the following case, reported by Dr. B. C. Miller, House-Surgeon of the County Hospital, Chicago, is selected as one of the most important:—

"Catherine Olston, a Swede, aged fifty-two, was admitted to the medical department of the hospital, April 18, 1868. She had been suffering for three months from chronic diarrhoea, caused by exposure and bad diet. Her limbs were wasted, the countenance was haggard, and the skin shrivelled. On the 25th she first complained of her eyes. Examination discovered, near the lower margin of each cornea, an external ulceration occupying quite one-third of its thickness, laterally elongated, and about one-sixteenth of an inch in vertical breadth. The pupils a little contracted, slightly responded to the influence of light and shade. The corneæ were almost totally insensible to touch. The passage of the point of a small strip of paper torn from the margin of a magazine, twisted hard until like a sharpened lead-pencil, the apex then slightly moistened, being scarcely felt, even when rudely drawn across them. In neither

eye was there intra-ocular tension, posterior synechia, discoloration of the iris, or perikeratic injection; and the corneæ, except at points of ulceration, were quite clear. Slight catarrhal conjunctivitis was present. General condition very weak. Two or three drops of atropia solution (ten grains to the ounce) were instilled within the lids of each eye three times during the next eighteen hours. No other local treatment. April 26th. The pupil of the right eye was slightly dilated, and the cornea had become somewhat sensitive to touch. Its ulceration had not increased. The pupil of the left eye remained contracted, and the cornea as insensible as before. Its ulceration had enlarged. General condition still declining. 27th. Atropia had been applied, since last record, to each eye three times. The pupil of the right eye was further dilated; the cornea more sensitive, and its ulceration showed signs of improvement. On the left the pupil was still contracted, corneal insensibility remained, and its ulceration was increasing. General status worse. 28th. Atropia had been further instilled twice as before. Right pupil well dilated, and the cornea quite sensitive. Its ulceration diminishing. Left pupil remained contracted; the cornea insensible, and its ulceration was further enlarged. General state of patient continued to fail. 29th. Atropia had been instilled once in right eye; twice in left. In the first the pupil was largely dilated, the cornea quite sensitive to touch, and its ulceration had still further diminished. In the other the pupil remained contracted, and the cornea full as insensible to touch as at time of first examination. Its ulceration had extended from the point of commencement at the lower margin nearly to the centre of the pupil, thereby involving about one-half of the cornea. The patient died from inanition during the following night. Careful watch could at no time discover any constitutional effects of belladonna. The general treatment consisted of stimulating and sedative remedies, with a small portion of opium, and an appropriate supporting diet. The above brief presents a patient emaciated, feeble, and shrivelled by one of the most depressing diseases. No synechia, change of color, perikeratic injection, intraocular tension, or other apparent evidence of disease of the internal membranes, existed. The corneæ were anæsthetized, yet clear, except at points of ulceration; and the pupils, though their dilatability was quite defective, were still perceptibly influenced by light and shade. No local treatment besides atropia at any time was used. The right eye being susceptible to its influence, the pupil gradually dilated, and a concurrent removal of corneal anæsthesia followed, with, first, arrest of ulceration, and then reparative efforts. The other eye being insusceptible to the remedy, the pupil refused to dilate, corneal anæsthesia persisted, and the ulceration steadily enlarged. Notwithstanding the ophthalmic affection, when first observed, was quite equal in each organ, and of a nature—corneal ulceration—but too easily attributable to the *general* defective nutrition, yet that cannot be assigned as the principal cause. For such a conclusion must be untenable when local medication influencing one eye is followed by arrest, and even some repair, of the keratic disturbance, while the same treatment, finding unsusceptibility to its influence in the other eye, is followed by the continuance of the destructive process. The cause, therefore, was some *local defect* of nervous action, which belladonna was competent to relieve on the one side, while it failed on the other."

ART. 163.—*Contributions to the Pathology of Burns of the Cornea from Lime.*

By H. DE GOUVÊA, M.D., of Rio de Janeiro.

(*Archives of Ophthalmology and Otology*, vol. i. No. 1; New York, 1869.)

The following are the conclusions at which Dr. de Gouvêa has arrived:—

1. The first change brought about by the burning of the cornea with lime is a destruction of the epithelium, the remains of which, mixed with a large quantity of lime, form a detritus. 2. If the lime has remained for a short time in contact with the cornea, it not only causes a more or less deep destruction of the substance

of the cornea by the rapid withdrawal of the fluid with which the cornea is impregnated, but it also penetrates in variable quantity into the substance of the cornea in the shape of small dust-like particles. 3. A large portion of the cauterized tissue is cast off during the inflammatory process, and is replaced by a cicatricial tissue containing lime. 4. If the destroyed epithelium, mixed with lime, is not immediately removed after the injury, it happens very often that a true petrification of the substance of the cornea, besides the changes caused by the cicatrix, takes place. The substitution of the detached corneal tissue is brought about by a cicatricial tissue, which is very cellular, and whose cells anastomose with one another in every possible way. 6. The cicatrix contains nerves which show the same anatomical arrangement as in a normal cornea, and whose terminations can also be followed into the epithelial layer. 7. If the cauterized portion of the cornea is removed, a white opacity does not result; on the contrary, the substituted tissue is clear and transparent. 8. In cases of burning of the conjunctiva with lime, the lime advances with ease into the episcleral tissue, in the form of globules of different size, which can at a later period form extensive incrustations on the sclerótica and the adjacent muscles, and thus increase the danger of the injury. 9. The opaque white and irremovable cloud is, at least for the greater part, occasioned by the presence of lime in the cicatrix.

ART. 164.—*On the Indications for Operative Treatment, and on a New Operation, "Keratotomy," after Severe Injuries of the Eyeball; with Cases.*¹

By W. SPENCER WATSON, F.R.C.S., &c., Surgeon to the Royal South London and to the Central London Ophthalmic Hospitals.

(*The Lancet*, July 8.)

In the case of penetrating wounds, the occurrence of glaucomatous symptoms is shown to be the most urgent indication for operative treatment—viz., either linear extraction or iridectomy. At a later stage, after the subsidence of the acute symptoms, iridectomy may be required, or the removal of the cataract indicated, and these operations are most likely to be successful when all signs of active congestion have disappeared. Cases in illustration are given. The prospect of the complication of sympathetic ophthalmia is always possible when the stage of congestion, with pain and photophobia, is much prolonged, and whenever a foreign body is left in the injured eye. Under these circumstances, the removal of the injured eye is sometimes necessary; but if constitutional treatment can be properly carried out, the removal of the injured eye may be postponed or altogether averted.

In traumatic and idiopathic cases of suppurative ophthalmitis the operation of keratotomy is proposed, and in one case has been performed successfully by the author. Its object is to establish a fistulous opening in the cornea, through which the morbid products of the inflammation may escape freely, until such a time has elapsed that the tissues may have recovered. It is suggested that in some cases of threatened suppurative ophthalmitis, keratotomy might prevent the anticipated mischief.

ART. 165.—*Dislocation of the Crystalline Lens into the Corpus Vitreum, and afterwards into the Anterior Chamber.*

By HENRY D. NOYES, M.D., of New York.

(*Archives of Ophthalmology and Otolaryngology*, vol. i. No. 1; New York, 1869.)

The following case came under the observation of Dr. Noyes at the New York Eye and Ear Infirmary:—

¹ Abstract of a Paper read at a Meeting of the Royal Medical and Chirurgical Society, June 27.

"A man, forty-five years old, in a drunken brawl received a blow with the fist on the left eye. About three weeks after it happened, that is, in December, 1868, he came to the infirmary. He was examined by Dr. Watts, who found the crystalline lens to have been displaced directly downward in a vertical plane, and its upper border projected above the rim of the enlarged pupil. A solution of atropia had been put into the eye to facilitate the ophthalmoscopic examination. No other injury was discovered, and the eye was but moderately injected. Sight appeared to be as good as the altered conditions of refraction would admit, but no examination with trial-glasses was made. About a week after, he said that his sight had greatly improved. He was now able to read, which before was not the case. The crystalline was discovered to have come forward into the anterior chamber. This fact was easily known by the way in which the iris was pressed back, and by the brilliant border of the lens where intense reflection of light occurs. The lens had a faint amber tinge appropriate to the age of the person, but was perfectly transparent. It was of course still inclosed in its capsule. The change of position had been brought about by a vigorous fit of sneezing. On the evening of the last day when he visited the infirmary, and when atropia had been put into the eye, he took a pinch of "catarrh snuff," and sneezed seven or eight times. Immediately afterwards he found his sight improved. In this novel state of affairs I at once proceeded to ascertain what was the exact effect on the refraction. As the nodal point was very decidedly advanced, the eye, if formerly emmetropic, must now have become myopic. The interesting point was the degree of myopia. Inasmuch, too, as the lens is in bulk not equal to the capacity of the anterior chamber, and its specific gravity heavier than that of the aqueous humor, its axis does not coincide with the visual axis, but lies below it. Hence there must be astigmatism. The examination was made both by myself and by Dr. Schiff. The good eye was found to have hypermetropia manifesta, 1-18. The injured eye to have 1-9, and myopia astigmatism 1-24. The formulæ for the two eyes are—

O. D. Hm. 1-18, V.=20-40.

O. S. M. 1-9, A. 8, M. 1-24, axis 30° (paral.), V.=20-50.

"If we assume that originally both eyes had the same refraction, viz., hypermetropia 1-18, which is probably less than would be exhibited with atropia, we find the displacement of the lens with the anterior chamber to be optically equivalent to myopia 1-6. The results found by trial-glasses were afterwards verified by the ophthalmoscope with the upright image, and proved to be in accord. I am not aware that any similar observation is recorded, and think the fact worthy of note as a contribution to physiological optics. There was at this time no irritation of the eye. The removal of the lens was hinted at, but the man was unwilling to submit to any operation. It was hoped that trouble might not arise, but the man was warned to return immediately in case of any mischief. After about a month's absence he returned with the account that after a little while the eye had begun to inflame, that he had suffered intensely, been deprived of sleep, but was dissuaded by his friends from coming sooner to the infirmary.

"Now the lens was opaque and the eyeball in a state of complete glaucoma. There was no perception of light; the globe hard and painful on pressure; there was considerable ciliary hyperæmia. For the sake of rendering the eye quiet, it was decided to remove the lens. This was done under chloroform, by means of Graefe's knife. Vitreous escaped during the operation. The reaction which followed was pretty severe, and suppurative iritis ensued. After being in the infirmary about three weeks he was dismissed. I saw him on March 20th; the eye now comfortable, scarcely any visible hyperæmia, the cornea hazy, and exudative tissue occupies the pupil and lens across the front of the iris; the globe has normal tension, it bears pressure without exhibiting pain. There is not the least perception of light."

ART. 166.—*Failure of Sight during Lactation.*

By JONATHAN HUTCHINSON, F.R.C.S., Surgeon to the Royal London Ophthalmic Hospital.

(*Ophthalmic Hospital Reports*, vol. vii. Part 1.)

Mr. Hutchinson draws attention to the fact that dimness of vision during suckling may be merely an indication of the existence of hypermetropia, and not necessarily indicate retinal disease. Until weakened by lactation, many hypermetropic women experience no inconvenience, being able to bear the accommodative strain necessary to overcome the error of refraction; but during lactation they find it difficult to keep the ciliary muscle up to its unusual exertion. The use of tonics is indicated at the time, and it is well to examine as to whether spectacles are not requisite.

ART. 167.—*On Syphilitic Amaurosis.*

By Dr. GALEZOWSKI.

(*Archives Générales de Médecine*, No. 1, 1871.)

1. Syphilitic retinitis and neuritis may exist without any morbid change in the choroid, most frequently in the form of apoplectic and exudative retinitis. These cases are, however, exceptional.

2. Syphilitic retinitis does not present any special pathognomonic signs by which it may be differentiated from other forms of retinitis.

3. But if the retinitis or optic neuritis be accompanied by an iritis or choroiditis, with or without flocculi in the vitreous, there is then no doubt that the affection is syphilitic. Experience has demonstrated to me that no other affection, glaucoma excepted, can give rise simultaneously to retinal apoplexies and to iritis or choroiditis.

4. Disturbances of the chromatic faculty are constant in these two forms of ocular morbid changes, especially in optic neuritis.

5. The most efficacious treatment of these maladies consists in the administration of iodide of potassium and of corrosive sublimate, carried to very large doses.

6. Syphilitic choroiditis is one of the most frequent forms of syphilitic amblyopia and amaurosis. The signs of this choroiditis are very characteristic, and, in fact, pathognomonic of syphilis. These are:—

(1) Disturbance or loss of vision, coming on by accessions or crises, frequently at very long intervals.

(2) A cloud in the form of cobweb floating constantly before the eyes.

(3) Very frequent photopsy.

(4) Photophobia.

(5) At a more advanced period of the malady, hemeralopia.

(6) Conservation during a long time of central vision, with diminution in extent of the peripheral field.

(7) Papilla cloudy.

(8) Pigmentary retinitis declaring itself at a more advanced period of the disease.

(9) Atrophy of the central vessels of the papilla, with conservation of the rosy tint due to the cerebral or nutrient vessels of the optic nerve.

7. Pigmentary retinitis is developed very frequently after syphilitic choroiditis.

8. The syphilitic pigmentary patches are disposed along the course of the retinal vessels, but they form, moreover, circular and circinated masses in the shape of the circles of the circinated form of herpes.

9. Acquired syphilitic pigmentary retinitis does not differ from congenital pigmentary retinitis, chiefly from that form which has hitherto been attributa-

ble to consanguinity of the parents, except in the circular form of the pigmentary patches.

10. Congenital pigmentary retinitis is an hereditary syphilitic affection.

11. Congenital pigmentary retinitis ought from infancy to be combated by administration of mercury and iodide of potassium. When it has lasted for some time, the progress of the malady cannot be arrested; it then becomes progressive, and at a more or less advanced period of life causes loss of vision.

12. Children born of syphilitic parents should from the period of their birth be submitted to frequent ophthalmoscopic examination, and the retinitis, when recognized, should be treated according to the indications given above.

ART. 168.—*On Glaucoma.*¹

By H. R. SWANZY, M.B., L.R.C.S.I., Ophthalmic Surgeon to the Hospital, and Surgeon to the National Eye and Ear Infirmary; late Assistant to the late Professor Von Graefe, Berlin.

(*Medical Press and Circular*, Nov. 22.)

Glaucoma consists—said Mr. Swanzy, in a clinical lecture on diseases of the eye—in an increased tension within the chamber of the vitreous humor—possibly a hypersecretion of the vitreous itself. What it is which gives rise to this hypersecretion, if such it be, has not yet been discovered, although numbers of experiments have been made on the subject, and theories without end propounded. The simple known fact, however, is, that glaucoma consists in an increased tension within the chamber of the vitreous humor, or, as we more commonly say, an increased intra-ocular tension.

We may recognize the increased tension of the disease by palpation of the globe of the eye with the tips of the two index fingers, when we shall find the affected eye much *harder* than the normal globe. In making this examination, Mr. Swanzy thinks it is well to support the 2d, 3d, and 4th fingers of each hand on the patient's brow over the eye, desiring him to look down at the same time. The pressure we apply to the globe must of course be very gentle, and it will be well at first to practise palpation of the globe on ourselves and our friends, so as to form an estimate both of the amount of pressure which we should exert and of the average tension of normal eyes.

There are two chief forms of glaucoma—namely, simple and inflammatory.

Simple glaucoma destroys vision very slowly indeed, such a case often lasting two or three years. It is unattended by pain, and the only signs of the disease on the exterior of the eye are usually a few rather engorged episclerotic veins, a shallow anterior chamber (in consequence of the pressure in it being less than in the vitreous humor), and a sluggish pupil (owing to paresis of the ciliary nerves from direct pressure on them).

Patients, then, laboring under this form of the disease, come complaining merely of failing vision. We investigate the intra-ocular tension, and find it more or less above the normal tension. We then examine the fundus oculi with the ophthalmoscope (a proceeding unattended with difficulty in this form of the disease, as the ocular media remain clear), and find the remarkable appearance shown in these drawings.² The surface of the disk, or optic entrance, instead of corresponding almost exactly with the surface of the retina, as it does in the normal eye, is pushed back, so that the appearance of the excavated or cupped disk is presented. The surface of the disk is often driven further back than the external surface of the sclerotic itself. This cupping of the disk results from the fact that it is the least resisting point of the coats of the eyeball, inasmuch as here the sclerotic is perforated (cribriform plate) by the filaments of the optic nerve as they enter the eye. In accordance

¹ Delivered at the Adelaide Hospital.

² Liebreich's *Atlas of Ophthalmoscopy*. Translated by H. R. Swanzy. Plate xi. figs. 8 and 9. London, 1870.

with hydrostatic laws, the pressure within the eyeball must be equal on every part of its walls, and of course the weakest point of these will be the first to give way to an abnormally high pressure. In commencing glaucoma, we may find no cupping of the disk, as it requires the tension to have reached a certain height, and to have lasted a certain time, before this effect of it is produced. The high pressure upon the disk and retina paralyzes these tissues, and so produces disturbances of vision. The defects of sight display themselves in central vision, so that the patient cannot read so well, or distinguish small objects with his former precision: but, what is of much greater importance for the diagnosis, and in the long run for the patient too, are defects in the eccentric portions of the field of vision, which are apt to be present. They should be looked for, *by lamplight*, in the following way: Directing the patient to close one eye, we cause him to steadily fix the other one (to be examined) on some object at at about two feet removed from it (*e. g.*, our hand or face); we then move a whitish object (the hand) slowly round in the periphery of his field of vision, and about one foot removed from its centre, and observe whether there be any position where the motion of the object cannot be seen. If the glaucoma be somewhat advanced, we shall almost constantly find a defect in the inner and upper region. At a still later period this defect may extend all round the periphery of the field of vision, and encroach also towards its centre, so that then the patient finds himself in a condition, which any of us may realize to ourselves by closing one eye and looking with the other through a roll of music or other small bored cylinder. At last this little remaining glimpse of the world is swallowed up by the ever advancing enemy, and the patient is left in irremediable darkness. Or, the defect in the field may merely advance towards the central point (point of fixation, macula lutea), and having attacked it, go no further; such a patient would only be able to see objects held to one side of his field of vision.

Inflammatory glaucoma has a very different course. It rarely extends over a term of more than a year, and usually but a few months. The tension is not a steadily increasing one, but advances in fits and starts, called "attacks of glaucoma." Each attack is attended by dimness of vision (often described by the patient as smoke in the room), by the appearance of rainbows round the candle or lamp, by severe ciliary neuralgia, which extends down the side of the nose, into the malar bone, and into the corresponding brow and side of the head; there is also much tearing and sensitiveness to light, and frequently vomiting. If then we examine the eye during an attack of this nature, we shall find it very hard, the anterior chamber shallow, a bright injection surrounding the cornea, and much engorgement of the episclerotic veins. In consequence of pressure upon the ciliary nerves, the sensation of the cornea becomes greatly diminished, as we may discover by touching it with a small shred of paper. In attacks of glaucoma we shall often find the aqueous and vitreous humors so opaque, that, even if the photophobia allow of the examination, the fundus oculi can scarcely be seen with the ophthalmoscope, the optic disk appearing but indistinctly, somewhat like the sun when seen through a thick fog. Such attacks vary of course in their intensity. An attack of glaucoma frequently lasts several hours. When it has subsided, the media become clear again, the vision becomes almost as distinct as before, and the tension returns nearly to its former condition. Every attack, however, adds something to the permanent intra-ocular tension, takes something from the acuteness of vision, makes another advance towards cupping of the disk and towards atrophy of the nervous tissues. As the disease gains a footing, the attacks become more frequent. Instead of returning once a fortnight, they come once a week, then perhaps once every second day, or every day. At last an attack comes which has no complete intermission, although it may diminish in severity for a few hours, and when this happens we say that the glaucoma itself has arrived. The last moment for the exercise of our art will then also have arrived, for a few days would otherwise suffice to extinguish vision. If the disease be still let run its own course, although sight be completely lost, yet the most violent ciliary neuralgia may continue for months. The eye is gradually disorganized. Cataract forms, and the iris becomes atrophied. Still later, the glaucomatous process leads to ecstasy of

the sclerotic ; purulent inflammation may then come on, and end in phthisis of the eyeball.

Glaucoma, of both forms, is most commonly double-sided. Both eyes may be attacked about the same time, but more usually there is an interval of weeks or months, or even longer.

Until within the last fifteen years a successful treatment for this terrible disease was unknown. Patients suffering from it, and applying to a surgeon for aid, were simply allowed to go home and get blind. It is to Von Graefe that humanity is indebted for the great discovery that abscission of a portion of the iris (iridectomy) would relieve increased intra-ocular tension.

In order to perform the iridectomy with a successful result, it is important we should attend to two points. 1. The portion of iris must be excised to its very periphery. 2. It must be a sufficiently wide piece. The first point is attained by making our incision into the anterior chamber, with the little iridectomy knife, as far back as possible—i. e., in the corneo-sclerotic border. The width of the portion of iris excised will depend upon the length of the wound, because, on withdrawing the knife, the aqueous humor flows out and carries with it a section of iris corresponding to the extent of the wound. This, then, is seized with a fine forceps, gently drawn forward a little, and snipped off with the scissors close to its base.

The earlier in the disease iridectomy is performed the more perfect is the result obtained, for, in general, we may expect by the operation to retain the degree of vision which exists at the time, but we can rarely calculate upon restoring what is lost. Eccentric defects of the field of vision do not recover after the operation ; at best, central vision may improve somewhat. We shall find the results of the iridectomy in cases of inflammatory glaucoma almost uniformly satisfactory. In cases of simple glaucoma, on the other hand, the operation sometimes appears to arrest the disease only temporarily, and we may afterwards have to employ a second iridectomy in order to complete the cure, and there are sometimes cases in which even that does not produce the desired effect, and where in spite of all your exertions the eyesight will be lost.

Glaucoma is a disease of old age, seldom making its appearance in persons under forty-five.

There is another form of glaucoma, which fortunately is very rare, but for which we should be prepared—namely, glaucoma fulminans. It resembles inflammatory glaucoma, except that it has no premonitory stage ; it gives no notice of its approach, but suddenly attacks an eye which has apparently been until then perfectly healthy. It comes on with great violence, and frequently destroys vision in a few hours. It consequently admits of no delay in the performance of the iridectomy.

ART. 169.—*On Glaucoma, Primary and Secondary.*¹

By T. SHADFORD WALKER, M.R.C.S.E.

(*Liverpool Medical and Surgical Reports*, October.)

Previously to the invention of the ophthalmoscope by Helmholtz, in 1851, the disease now known as glaucoma was only recognized as such when it had arrived at its last and most complete stage, that, namely, in which vision was so far affected that objects could only be seen dimly in one position of the eye—the general field of vision having become greatly contracted. Nothing beyond the perception of light still remained, the pupil was seen dilated and fixed, the iris reduced to a mere ring, its color altered, and its fibres muddy and indistinct, the lens semi-opaque, and the area of the pupil showing a greenish reflection) from which the complaint obtained its name), and the eyeball itself, when touched, being of a stony hardness. Several observers, especially Weller, Lawrence, and Mackenzie, had noted and pointed out the importance of increased tension of the globe ; but the early stages of glaucoma were con-

¹ Read at the Liverpool Medical Institution, Session 1870-71.

founded with the symptoms of amaurosis, and passed under that name. Soon, however, after the ophthalmoscope allowed the interior of the eye to be examined, Prof. Jaeger, of Vienna, observed and carefully described the appearance of the optic disk in glaucoma, drawing special attention to the typical excavation, which, from the peculiar shading of the cup, was supposed to be an elevation instead of a depression. Descriptions of the ophthalmoscopic appearances presented by isolated cases were also published by other observers, and the increased tension of the eyeball in glaucoma was remarked upon; but it was not until the late Prof. Von Graefe, of Berlin, combining the observations of others with his own, demonstrated the connection between increased globe-tension and the excavation of the optic disk (the true nature of which he was the first to discover), and the consequent pulsation of the central artery, that the real pathology of glaucoma was made clear. Von Graefe, moreover, reasoning from the success he had obtained by performing iridectomy in ulceration and progressive staphyloma of the cornea (which he explained by the relief of the tension undoubtedly produced in these cases) to the great probability of a similar result in glaucoma, at length, in 1856, had the satisfaction of announcing the complete success following iridectomy in all those cases of glaucoma where delay in resorting to it had not occasioned such alterations in the structure and nutrition of the retina and optic nerve as to render operative interference of any kind of no avail. He had thus the double glory of being the first adequately to recognize the essential character of a very serious disease, and to point out a most valuable remedy, the simplicity and good effect of which have been acknowledged by the foremost oculists of all nations.

Mr. Walker having remarked that glaucoma was chiefly a disease of advanced life, and that it resembled gout, phthisis, and other constitutional disorders in the tendencies common to them of transmission from parent to offspring, gave a careful description of acute inflammatory glaucoma. A premonitory stage was recognized, in which very mild transitory attacks passed off without apparently doing the eye much damage, but eventually these become very frequent, leaving intervals of only a few days; the sufferer began to pass restless nights, and found no relief in his symptoms on awaking in the morning; his sight became affected, and contraction of the field of vision was observed. Then, usually at night, and accompanied by violent neuralgic pain in the forehead, the attack suddenly came on which led to the title given to this form of glaucoma of acute inflammatory. Rapidly increasing dimness of vision, marked dilatation of the pupil, a narrowed, muddy condition of the iris, more or less turbidity of the humors, and great increase in the tension of the eyeball, soon follow, and are accompanied by great constitutional disturbance. One form, coming on suddenly, and actually destroying sight within a few hours, was noticed by Von Graefe, and termed by him "glaucoma fulminans." Fortunately, it is of extremely rare occurrence. A case of this kind, occurring in a working man who came to the Eye and Ear Infirmary, was described by Mr. Walker. This patient stated that two years previously, at bedtime, without any warning, the left eye was attacked; this was ushered in by excruciating pain, and in the morning vision was gone, not even a bright light held close to the eye being seen. In a similar manner, six weeks ago, the sight of the right eye had entirely disappeared within two days. No operation had been performed, and although he still suffered from attacks of dreadful pain in the eyes, he would not allow any operation to be performed.

The second variety of primary glaucoma, known as chronic inflammatory glaucoma, was next described. It is distinguished from its predecessor mainly by having, instead of intermissions, remissions and exacerbations, rather than by the occurrence of fresh symptoms on a previously quiescent condition. Again, the cornea is much more affected in this variety; after a time it becomes flattened, and loses its sensibility to a remarkable extent, so that in many instances it may be touched or rubbed without producing any signs of distress.

A third variety exists under the name of glaucoma simplex, and is really only a very insidious form of the last; in which the inflammatory symptoms are masked, or are so slight and transitory that the patient does not notice

them. So quietly does the disease advance, that the sight of the one eye may be completely lost, while that of the other eye begins to fail in a similar manner, and what was ascribed to a natural failure of sight, due to increasing years, is discovered to be disease requiring prompt measures to arrest its progress.

Having completed his sketch of the three varieties of primary glaucoma, the author made a few remarks on secondary glaucoma, which, as its name implies, consists of the grafting on a previous disease of the glaucomatous condition. Speaking generally, it may be said that those inflammatory diseases of the eye which in their course occasion an increase in the tension of the globe, and which on subsiding leave behind deposits of organized lymph, binding down and agglutinating the tissues, are very apt to occasion glaucoma.

In examining these classes of cases, three modes of investigation must be pursued: (1.) A careful inquiry is made into the history of the disease, and into the patient's symptoms. (2.) An ophthalmoscopic examination is made, and this, in a typical case, reveals the optic disk of a muddy, reddened, or yellowish tint, instead of showing a flat surface, being deeply excavated or cupped, the arteries smaller than natural, and exhibiting, either spontaneously or on very slight pressure, a distinctly visible pulsation, the retinal veins swollen or knotted, and very tortuous, the retina itself deprived of its transparency, becoming blurred, indistinct, and muddy, or being atrophied, and showing the choroidal pigment through its coats. (3.) Examination by the finger to determine the tension of the globe. In connection with this subject, the new ophthalmotonometer, invented by Prof. Doe, of Berne, was described. It consists of a hollow ivory cylinder, containing a smaller solid ivory cylinder, the latter movable, and connected at its upper end with two upright needles, which, when pressed upon by the solid cylinder, move like the hands of a barometer along a flat metallic indicator divided into equal parts, so that when touched or pressed upon, they move until the pressure ceases, when they remain stationary, registering the pressure, which is reckoned in grammes and millimetres; the patient being laid down and the eyelids separated, the operator, by means of a silk thread, suspends the instrument by his teeth, and allows it gently to stand with its own weight on the outer side of the anterior surface of the eyeball, steadying it, but not holding it, by placing a finger against the side. The solid cylinder is allowed to project two millimetres below the level of the hollow one before being placed on the eyeball. So soon as the end of the projecting cylinder touches the globe, pressure is exerted, and the needles begin to register.

Proceeding to consider the cause of glaucoma, Mr. Walker, after mentioning the different views that had been held at various times, remarked that most probably the correct one was that held by Von Graefe—viz., that in all persons predisposed to glaucoma a rigidity and non-distensibility of the sclerotic exists, that this natural condition is increased and confirmed at the approach of old age, so that the ciliary nerves become pressed upon, their functions are interfered with, and the nutritive and absorbent action of the parts they supply becomes affected, so that when slight causes of irritation arise the fluid contents of the eyeball no longer can be changed. The result is, that on the occurrence of inflammatory action no yielding of the sclerotic can take place, the products of inflammation are not absorbed, and increased tension follows. The most promising of the plans for relief at first employed—viz., paracentesis corneæ and intra-ocular myotomy—have been gradually abandoned after repeated trials, and, in spite of strenuous opposition, the practice of iridectomy, first proposed by Von Graefe, has received the sanction of the foremost oculists of all countries.

The remainder of the paper was occupied with a review of the theories as to the rationale of the relief afforded by iridectomy. These all, however, tend to support the view that this operation acts by diminishing intra-ocular pressure, thus affording the restitution of conditions favorable to nutrition and circulation. Finally, Mr. Walker urged the early performance of the operation, as soon as a glaucomatous condition is fairly recognized.

ART. 170.—*Corelysis and Paracentesis for Results of Iritis.*

By BRUDENELL CARTER, F.R.C.S.

(St. George's Hospital Reports, 1871.)

Mr. Carter suggests that Streatfeild's spatula-hook should be made to *cut* in the notch, for which purpose the latter should be somewhat larger than he made it. Mr. Carter fears irido-dialysis, and he further suggests that the spatula-hook be made bent on the flat, for its use on the *nasal* side of the eye. When, in iritis, the tension is increased, and only recently, Mr. Carter does paracentesis, and evacuates the aqueous humor "by opening the little incision by a fine probe, or by the beak of Weber's lachrymal knife. In most cases it will be desirable to introduce the probe two or three times a day for the first few days, and thus to establish a drain of aqueous humor, which will, in fact, be a sort of indirect depletion of the vessels of the eye." (In a case of the intractable creeping ulcer of the cornea, Mr. Carter incised it, and every day, for a week or ten days, reopened the incision along its whole length by the beak of Weber's knife.)

ART. 171.—*Injury of the Left Eye; Sympathetic Ophthalmia of the Right; Loss of Vision of the Eye secondarily affected; Vision retained in the Injured Eye.*

By THOMAS R. POOLEY, M.D., of New York, Assist. Surgeon to the New York Ophthalmic and Aural Institute.

(Archives of Ophthalmology and Otology, vol. i. No. 2.)

Ophthalmic surgeons are still divided in opinion as to the propriety of removing an injured eye while it retains any power of vision, after sympathetic inflammation has declared itself in the other, and progressed to such an extent as seemingly to impair its function. Cases are to be found scattered through the literature of the subject in which, under such circumstances, the injured eye has eventually proved to be the more serviceable of the two. McKenzie, in his treatise *On Diseases of the Eye*, says: "It is remarkable that the amaurotic affection of the eye which suffers sympathetically is generally more complete than that of the eye which was injured." Wells remarks that "if some degree of sight still lingers in the injured eye, and the sympathetic inflammation has already produced extensive injury, it should not be removed, for in some similar cases the injured eye has eventually proved of more use to the patient."

The following case is so strikingly corroborative of the correctness of these observations, that Dr. Pooley has thought it worth reporting:—

"D. M. K., aged thirty-two, a merchant, consulted me July 6th, 1869. Seven years ago, while breaking stone with a hammer, a piece of steel flew off from the hammer and struck him forcibly upon the left eyelid, through which it penetrated and entered the eye. The foreign body remained for some weeks in the eye (exactly how long he does not remember), and was then removed by his family physician. The wound healed, but two weeks later the eye began to be painful, red, and swollen. A week after the commencement of the trouble in the left eye, the right began to show signs of sympathetic irritation. He first noticed lachrymation, and then temporary obscurations of the visual field; subsequently this eye also became painful, red, and swollen. In two years the right and sympathetically affected eye had lost all perception of light. *The sight in the other—the injured eye—now began steadily to improve.*

"His condition at the time he came under my observation was as follows: There was a scar upon the upper sclero-corneal margin of the left eye, in which the iris was engaged, so as to form an anterior synechia and pyriform pupil. The iris, throughout its entire pupillary border, was attached to the capsule of

the lens, immovable, and somewhat discolored. The pupil, with the exception of a small aperture, filled with a false membrane. In the right eye, the color of the iris was changed to a dirty green, and a dense opacity occupied the lower border of the cornea. The pupil was completely occluded by a false membrane, and the whole globe somewhat atrophied; vision in the right eye was completely abolished, there being not even perception of light. S. in the left eye = $\frac{2}{3}$; Tn. in the left eye; S. somewhat diminished in the right. The fundus of the left eye could be illuminated with the ophthalmoscope, but no details were discernible. For the last four or five years he has had recurrences of ciliary inflammation, with more or less pain in both eyes, *but always commencing in the right, or non-injured eye.* The last attack took place about four months before I saw him. I advised enucleation of the right eye, inasmuch as it evidently was now the source of irritation, and after its removal an iridectomy might with advantage be performed upon the other.

"Dr. Knapp, who saw him with me in consultation, confirmed this opinion. The patient, however, refused to submit to the operation, and passed from under my observation."

ART. 172.—*Two Cases of Extraction of a Foreign Body from the Corpus Vitreum.*

By R. BERLIN, M.D., of Stuttgart.

(*Archives of Ophthalmology and Otology*, vol. i. No. 1.)

The first case was that of a young woman serving in a shooting gallery for air-guns, who was struck on her right eyebrow with the barrel of a charged gun, which at the same moment went off. Vomiting, diarrhœa, and short attacks of fainting and giddiness followed. She was seen twelve hours after the accident. There was no fever, and no retardation of pulse. The eyelids were extremely swollen. There was great chemosis of the conjunctiva. The cornea was gray and opaque, and lacerated by a wound branching in four directions. The eyeball was collapsed and soft, and all perception of light lost. In order to judge whether the air-gun had power to drive the ball into the brain, the gun was obtained, and a shot fired against a deal door at a distance of four paces. The ball was thrown back by the soft wood, a superficial mark being alone left. The result of this experiment led Dr. Berlin to conclude that the ball had not force enough to pass twice through the membranes of the eye, and also to penetrate the contents of the orbit and its walls. As all chance of restoring sight was lost, the interior of the eye was examined with a probe, and a hard smooth object was felt at the bottom of the eyeball, which, on being removed with forceps, proved to be the bullet. The inflammation gradually subsided, and the patient was dismissed in eighteen days with a shrunken eyeball.

The second case was that of a smith, who, while chiselling cast steel, received a blow on his right eye, which was followed by rapid obscuration of sight. When seen, four hours later, the conjunctiva was moderately inflamed; there was a perpendicular wound of the cornea, three lines in length, reaching to the sclerotic; the iris and lens were cut in the same direction as the cornea, and the lens was already opaque. On examining the visual power of the eye, it was found that the light of a candle was recognized at the distance of about six paces, but it was found that the upper half of the visual field was entirely wanting, indicating either that the inferior part of the retina did not perceive light, or that the rays of light were prevented reaching that part of the retina by some material obstacles. From a series of anatomical investigations on eyeballs extirpated soon after injuries, Dr. Berlin concluded that the limitation of the field of vision depended on an extensive hemorrhage in the vitreous humor. He is of opinion that limitation or absence of the upper part of the field of vision is an important diagnostic symptom of the presence of a foreign body in the eye; as when such a body is propelled through the coats of the eye it naturally sinks to the lower part of the vitreous humor, and any blood that may be

effused occupies a similar position. The patient was received into the hospital the following day. As the symptoms had increased in severity to such a degree as to indicate the commencement of a purulent inflammation of the inner coats of the eye, there was no hope of recovery of sight; but it was necessary, with the view of checking the inflammation and avoiding the chance of sympathetic ophthalmia of the other eye, either to extract the foreign body or enucleate the eye. The patient preferred the former operation, which was performed by making a linear incision at the lower part of the cornea, removing a portion of iris and the lens, probing for the foreign body in the vitreous chamber till it was felt, and then removing it with forceps. A piece of iron, $3\frac{1}{2}$ lines long by 2 lines broad, was thus removed, accompanied by a little blood and pus. The eye gradually shrank without the annoyance of suppuration of the vitreous.

ART. 173.—*On the Treatment of Deep-seated Syphilitic Disease of the Eye.*

By CHARLES BADER, Ophthalmic Surgeon to Guy's Hospital.

(*Guy's Hospital Reports*, vol. xvi. 1871.)

The following is Mr. Bader's summary of the treatment applicable in cases of deep-seated syphilitic disease of the eye:—

Wherever within the eye the morbid changes be situated, whether the iris or cornea be implicated or not, have the pupil kept well dilated by atropia, and continue this for three or four weeks from the time when the attack commenced.

One or two leeches to the temple at bedtime will relieve pain, should the effective use of atropia, as shown by the dilatation of the pupil, not have done so.

The inconvenience arising from intolerance of light should be obviated by the use of blue-tinted spectacles.

No near work, reading, &c., should be allowed while inflammatory changes are existing. Once the atrophic spots have appeared, the free use of the eyes may be permitted.

General medical treatment should be tried in all cases. Mercury during the formation of lymph and effusion, and iodide of potassium after this stage has passed, are freely given at Guy's.

The patient should live well, but, while under medical treatment, should abstain from malt liquor.

If within four to six weeks no marked improvement of sight ensues, little hope remains. Iridectomy can be recommended if the tension of the eyeball is increased.

ART. 174.—*On Pigmentary Retinitis due to Hereditary Syphilis.*

By X. GALEZOWSKI, M.D.

(*Archives Générales de Médecine*, No. 1, 1871.)

“It has now been clearly demonstrated that hereditary syphilis can give rise to keratitis, to iritis, and to choroiditis. Mr. Hutchinson has given indisputable proofs that both the choroid and the retina may be the seat of an hereditary syphilitic affection. With regard to the pigmentary form of retinitis pathological facts on this subject are still in default. About a year ago I was called to examine the eyes of an infant at Hôtel-Dieu. In this subject, who was suffering from pronounced hereditary syphilis, I was able to make out the existence of retinal pigmentation; the infant, however, so far as I was able to judge by its appearance, could see very well. A much more important case was observed and published by Mr. Pope, of the United States. Here there was a positive anatomical proof of the development of pigmentary retinitis in a subject of hereditary syphilis. Had the infant survived, one would have been able to find at a more advanced age a pigmentary retinitis, and there would have been

no doubt of the syphilitic origin. The following are the details of this interesting and important case: The patient was an infant aged seven months, who had lost its sight in consequence of infantile ophthalmia, and who at the same time had been attacked with hereditary syphilis. In consequence of death from pulmonary phthisis, Mr. Pope was able to examine the eyes, and the following are the details with regard to the morbid changes which he succeeded in making out in the retina and choroid. The retina was not atrophied at its posterior part—it was in fact increased to twice its normal thickness, and contained masses of pigment. This thickening of the retina had been caused by proliferation of its elements, and in particular of the granular layers. Müller's fibres were much thickened, and the pigment was found collected particularly in the thickened portions of the retina, but in no visible relation to the vessels. At other points the pigment was seen to occupy the surface of the retina, but was enveloped in a thick layer of the fibrous mass. Around one pigmentary focus was observed a considerable number of vessels of new formation. Here and there had been developed masses of clear discoid cells with rounded nuclei, resembling those found in the choroid. The nerve-fibres presented finely granular varicosities.

"This was a typical pigmentary retinitis presenting all the classical signs of the congenital affection. If the infant had survived the pulmonary affection, and had not had purulent ophthalmia, it would probably have preserved a portion of its vision, and hemeralopia and other signs of pigmentary retinitis would not have become apparent until a more advanced age. There would have been practitioners ready to find the cause of the affection in the consanguinity of the parents, whilst indeed syphilis alone was the cause.

"The immense interest attached to these researches may be readily comprehended. Hereditary syphilis is cured much more readily when one begins to treat it soon after the birth of the child. But it is much more important to attack pigmentary retinitis at its commencement by an anti-syphilitic treatment in order to obtain a cure of this fearful malady, or at least to avert its development. When the age of infancy is passed, it is no longer possible to obtain any good results even by the most energetic anti-venereal measures.

"When one meets with patients of the age of ten, twelve, twenty, or thirty years, the retina and optic nerve are generally found much disorganized, the vessels atrophied, and vision seriously compromised, if not completely abolished.

"On this subject I think the following conclusions may be useful:—

- "1. Syphilitic choroiditis most frequently leads to softening of the retina and a pigmentary retinitis resembling in all respects congenital pigmentary retinitis.
- "2. This affection ought to be included among the secondary or intermediate affections of syphilis.

"3. A mercurial treatment is the sole means by which good results can be obtained; the most efficacious preparation is the bichloride of mercury, which ought to be given at first in full doses. The treatment can be efficacious only after it has been prolonged for several months and when salivation has been produced.

"4. Congenital pigmentary retinitis, which it is the fashion to attribute to consanguinity of the parents of the infant, is really an hereditary syphilitic retino-choroiditis.

"5. It is indispensable to submit to ophthalmoscopic examination all newly-born children in whom the presence of the syphilitic virus is suspected, so that the mercurial treatment may be applied immediately after the discovery of the pigmentary retinitis."

ART. 175.—*Tumors of the Retina.*

By FRANCIS DELAFIELD, M.D., of New York.

(*Archives of Ophthalmology and Otolaryngology*, vol. ii. No. 1.)

Dr. Delafield places on record several cases of retinal tumors, from the study of which he draws the following conclusions:—

1. The rule laid down by Hirschberg, that retinal tumors grow outwards towards the choroid, has many exceptions.

2. The elements of these tumors only resemble the granules of the retina when altered by reagents and seen with low powers. When examined fresh and with high powers, they are seen to be identical with the so-called lymphoid cells, which compose so many new growths.

3. If we dismiss from our minds the superficial resemblance between the elements of these tumors and the retinal granules, they at once take their place in the class of round-celled medullary sarcoma.

4. The variation in the size of the cell-body and in the proportion of stroma in different parts of these tumors is almost always found. This variation is the same which we find in most sarcomata, and is no reason why we should speak of a tumor as beginning as a glioma, and then becoming sarcomatous.

5. Not only the anatomy but also the clinical history of retinal tumors corresponds exactly with those of the medullary sarcoma.

6. The development of secondary tumors follows the rule laid down by Virchow for sarcomata, and occurs :—

(1) By continuous infection of the retina, optic nerve, and perhaps the brain.

(2) By discontinuous infection, forming the choroidal, scleral, and episcleral tumors.

(3) By metastasis proper, forming tumors on the bones, lymphatic glands, and liver. The idea that the choroidal tumors are formed by continuous infection from the choroidal tumors seems to be erroneous.

In the very great majority of sections these tumors are evidently discontinuous, and even if in some few instances a scanty cell communication is found between the two, it seems most probable, from what we know of other sarcomata, that this is a cell-growth posterior to the development of the secondary tumor. That, however, these secondary tumors, although discontinuous, are produced from cells which have wandered from their parent tumor, is possible.

ART. 176.—*Report of Melanotic Tumor of the Eye.*

By GEORGE LAWSON, F.R.C.S., Surgeon to the Middlesex Hospital.

(*British Medical Journal*, Oct. 21.)

At a meeting of the Clinical Society of London, October 13th, Mr. G. Lawson related the particulars of a case of large melanotic tumor of the eye, which had burst through the sclerotic, and had extended into the orbit. He first excised the globe, and then freely applied the chloride of zinc paste for the purpose of destroying all the tissues within the orbital cavity, and thus effectually getting rid of all the cancer germs with which those structures are in such cases generally infiltrated. The operation was performed in July of this year, and the patient was now progressing favorably towards recovery. All the tissues within the orbit sloughed, and large portions of the bony cavity exfoliated. Mr. Lawson remarked that when the diagnosis of melanotic tumor within the eye is made at a very early stage of the disease, the simple removal of the eye is frequently sufficient. He quoted the case of a patient in whom he had been able to recognize the tumor by the ophthalmoscope when it was scarcely of the size of a pea. He removed the eye, and now nearly three years have elapsed and there has been no recurrence of the disease in the orbit.

Mr. De Morgan expressed the opinion that the caustic might be applied with advantage, even in the early stage of the disease, after removal of the eyeball. In a case alluded to by the author of the paper he believed life might have been prolonged had this been done. He had observed epileptiform convulsions occur immediately after the application of the caustic on more than one occasion. In reply to Dr. Buzzard, he stated, however, that they did not recur.

Mr. Lawson remarked that his patient had presented similar cerebral symptoms after the operation.

The President, in alluding to the advantages of early removal, referred to a case in which a melanotic affection of the eye had been removed nine years ago,

and in which the disease had not returned until eighteen months ago. He wished that cancer always attacked the eye, as it could then be seen and removed early.

A long and interesting discussion was here awakened by a remark of the President on the local origin of cancer, and an expression of disbelief in the generally accepted meaning of the term constitution. The question of a swollen gland arresting disease was discussed. It was pointed out by Mr. De Morgan that cancer spreads from gland to gland as from the original growth to a gland. In scarcely an instance, he said, does it happen that the part which ought to be most prone to disease, on the constitutional theory of cancer, becomes affected in recurrences, as, for example, in the case of the mamma.

Mr. Lawson further pointed out that family history was rare in cancer, as shown in the reports of the Registrars of the Middlesex Hospital.

Mr. Arnott, however, expressed his belief that the recurrence of cancer in the remaining mamma, although very rare, was more frequent than thought to be by Mr. De Morgan.

Mr. Henry Lee, Mr. Nunn, and others, also joined in this discussion, which closed the proceedings of the meeting.

ART. 177.—*Embolism of the Central Artery of the Retina.*

By C. S. JEAFFRESON, Assistant-Surgeon, Newcastle-on-Tyne Infirmary.

(*British Medical Journal*, Sept. 23.)

The following case is placed on record by Mr. Jeaffreson:—

R. M., aged twenty-eight, whilst following his usual occupation as a brick-layer, became suddenly conscious of the rapid approach of blindness in his right eye. He described the blindness as having commenced in the centre of the field of vision, and gradually spread towards the periphery with such an amount of rapidity that, in a few moments, total darkness was produced. He left his work in great alarm, and the following day presented himself to me.

On examining the state of vision Mr. Jeaffreson found the left eye normal. In the right eye the whole field of vision was obscured, with the exception of a small portion in which it was highly amblyopic, recognizing only obscurely the presence of the finger when held up. After his pupils had been thoroughly dilated with atropine, Mr. Jeaffreson examined him with the ophthalmoscope. The size, color, and shape of the optic disk, the reflection from the fundus, and the condition of the vessels on the left side, were normal. On the right side the optic disk was unaltered in color, but the retinal arteries were reduced to the most minute threads, the veins congested, and for some distance surrounding the macula lutea there was a paleness of the fundus which made the redness of that spot stand out in prominent contrast. On searching for signs of cardiac disease, Mr. Jeaffreson found that, although there was no murmur of any kind, there was distinct evidence of hypertrophy, and that the heart's action was irregular and intermittent.

The chief peculiarities in this case are the manner in which the blindness supervened, and the retention of a certain amount of vision in a very small portion of the field. The former, Mr. Jeaffreson believes never before to have been noticed; and the latter, though noticed, not satisfactorily explained.

The only explanation that can be offered of a portion of the field of vision still retaining sensibility, is, that some spot in the retina must derive its blood supply, partially at least, from some other source than the retinal artery; and if vision improve, we must expect to find it increasing the area of this spot, where if any collateral circulation is established, we may most reasonably look for it.

ART. 178.—*Congestion Papilla.*

By H. R. SWANZY, M.B.

(Dublin Quarterly Journal, February 1.)

Mr. Swanzy reports a case of this kind in which he diagnosed and there was found after death a tumor of the brain. The patient had constant headache, frequent vomiting, great drowsiness, and loss of memory. The pupils were dilated widely. One eye had slight perception only of light. He was ill four months. The tumefaction of the optic disk was very prominent, but did not extend far into the surrounding retina. The retinal veins were very much engorged and tortuous, disappearing where they turned round the edge of the tumid part. The extreme prominence of the papilla is depicted in a woodcut showing the eye, in two parts, cut open. The ophthalmoscopic appearances are given as a chromo-lithographic illustration. The author concludes by contrasting this state with that in neuritis descendens, the pathological changes in congestion papilla ceasing at the lamina cribrosa.

ART. 179.—*Cataract: Early Operation.*

By BRUDENELL CARTER, F.R.C.S.

(St. George's Hospital Reports, 1871.)

When both eyes are affected by cataract, and this is progressing equally and slowly, Mr. Carter would hasten the maturation of the cataract in one eye by opening the capsule with a needle—a practice much followed, we believe, of late, by Mr. Bader, of Guy's. The author would even do this under certain extraordinary circumstances if the non-cataractous eye were blind. He contrasts the advantages of this artificial maturation with the method of extraction of the immature cataract in its capsule. "In all cases in which trouble is to be anticipated from the adhesive character of the still transparent cortex, the surgeon has the additional resource of extracting the lenticular system in its entirety, the lens in its unbroken capsule. But a transparent cortex generally implies a condition of rather firm connection between the hyaloid and the posterior capsule, and there is then constant liability to loss of vitreous prior to the escape of the lens. When this happens, or when the lens resists moderate pressure, it becomes necessary to use traction instruments; and the operation has then been followed, in some instances, by inflammation and cell-proliferation in the vitreous itself, causing turbidity that only very slowly disappears. Moreover, the extraction in the unbroken capsule requires a very large iridectomy, likely to be productive of dazzling and imperfect vision; and it also requires a rather large external section, which increases the risk to the cornea. On the whole, therefore, the dangers of this method are probably greater than those of puncture as a preliminary to extraction, and its advantages in respect of saving time and of perfection of vision are only obtained when the course of events is altogether without accident or complication."

ART. 180.—*A Modification of the Advancement of Muscle.*

By R. LIEBREICH, M.D., Ophthalmic Surgeon to St. Thomas's Hospital.

(Archives of Ophthalmology and Otology, vol. i. No. 1; New York, 1869.)

Anatomical researches with regard to the capsule of Tennon and its connection with the muscles of the eye, the conjunctiva, and the caruncle, have induced Dr. Liebreich for the last four years to modify the operation for strabismus. The following are the results of these investigations:—

1. The union of the muscles with Tennon's capsule is a double one. On one side, an annular union of the posterior part of the capsule, and its sheath-like

processes directed towards the orbit with the belly of the muscles; on the other, a firm adherence of the anterior half of the capsule with the surfaces of the muscles which project into the hollow of the capsule. 2. The conjunctiva is firmly united with the outer surface of Tennon's capsule from the edge of the cornea as far as to an irregular, annular, well-defined boundary line, and in this way it is indirectly in very important relation to the muscles of the eye. 3. The caruncle, together with the plica semilunaris, rests on a ligament which passes from Tennon's capsule to the edge of the orbit. The contraction of the rectus internus necessitates that by the turning in of the eye this ligament is stretched, and thereby the caruncle which is placed upon it will be drawn towards the inner margin of the orbit. But at the same time also the outer edge of the caruncle, together with the plica semilunaris and a portion of the conjunctiva lying next to and behind it, will be drawn backward and form a fold. This occurs partly because the conjunctiva in the movements of the eye lies to a certain extent close to the globe as far as a certain line; but partly also because the muscle, on account of its union with the anterior half of the capsule, draws the latter backward in its contractions, where the conjunctiva, plica semilunaris, and caruncle, which are united to it, are obliged to follow. The procedure to which these anatomical observations have led the author is the following: In the tenotomy of the rectus internus, he raises up with the forceps a fold of the conjunctiva at the lower end of the insertion of the muscle, cuts it through with the scissors, passes through the opening between the conjunctiva and the capsule, separates these two membranes carefully as far as the plica semilunaris, and divides the latter likewise as well as the caruncle from the subjacent parts. After having completely freed from the conjunctiva all that part of the capsule which is important for the retraction of the muscles, Dr. Liebreich separates the insertion of the muscles from the sclerotic in the usual manner, and prolongs at the same time the vertical section of the capsule above and below, the greater the retrocession is to be; and then closes the conjunctiva wound with a suture. As the advantages of his proceedings, Dr. Liebreich has already given notice two years since, first in the *Archiv für Ophthalmologie*, of the following: 1. A greater freedom, and a much greater interval for the graduation and the distribution of the operation for strabismus. 2. The avoiding of the sinking in of the caruncle, and every trace of a scar, which are sometimes left behind in the ordinary tenotomy. 3. The avoidance of more than two operations in the same individual, and also of more than one on the same eye. It has never entered the author's mind, as has been erroneously affirmed, to recommend the correction of a high degree of strabismus by a single operation. After having described this modification of causing retrocession of the muscle more than two years since, Dr. Liebreich now communicates an analogous modification of its advancement, for the simple reason that, though he had very soon numerous opportunities to try the proceeding for common tenotomy, the indication for advancement occurs much seldomer. But now he has been further able sufficiently to observe the results of the latter, to feel justified in recommending the following proceeding: After a broad vertical incision of the conjunctiva in the neighborhood of the insertion of the muscles, or better somewhat behind it, he burrows beneath the conjunctiva with the scissors, both towards the cornea and the opposite directions, so as to separate it completely from the subjacent Tennon's capsule. Afterwards he makes the tenotomy and cuts the capsule above and below, in the direction of the insertion of the muscle, so far that the muscle and the part of the capsule that lies upon it are completely movable and may easily be brought forward to the border of the cornea. He (Dr. Liebreich) fastens them in the following manner. He passes two fine needles, attached to the two ends of the same thread, above and below at a distance of about one line from each other; first through the capsule and the end of the muscle, and then from behind forward through the conjunctiva, and ties the loop over the conjunctiva. Of such sutures, or rather loops, he applies at least two—one in the neighborhood of the upper, and the second in the neighborhood of the lower border of the muscle. After the muscle and the capsule are in this manner fixed beneath the conjunctiva, close to the edge of the cornea, he carefully unites the conjunctiva wound with several sutures. If the

attainment of the mechanical design demands the shortening of the muscle, this presents no difficulties; on the contrary, this proceeding favors, when necessary, the removal of a portion of the anterior extremity of the muscle, and also of Tennon's capsule. By the latter procedure we are able to produce a considerable effect on the prominence and apparent size of the eyeball. But the advantage of this proceeding lies in this, that we avoid thereby the cutting out of the conjunctiva, which very often leads to essential inconveniences, in particular long-remaining irritation, tight folds impeding the movements of the eye, &c. In every case it is more rational to spare the conjunctiva, if its excision is not requisite to attain the mechanical effect.

ART. 181.—*On Naso-Pharyngeal Polypus.*¹

By M. VERNEUIL.

(*Gazette Hebdomadaire*, No. 38, 1870.)

"It has been questioned if one ought to retain the name of polypus for large and diffuse tumors with multiple insertions, which destroy the bones and produce enormous ravages in the deep-seated parts of the face. In these cases the term polypus should be abandoned. Naso-pharyngeal polypi spring from the periosteum of the base of the cranium, and are made up of elements of connective tissue; it is necessary to style these periosteal fibromata of the base of the cranium. These growths cannot be classed with cancers, since they do not present the same structure, invading march, or tendency to generalization.

"Ought these growths to be operated on if there is a prospect of almost inevitable failure? If one can recognize much destruction, diagnose perforation of the cranium, and prophesy a fatal termination, it is necessary to abstain. But the diagnosis in most cases is imperfect. The affection by itself is almost necessarily fatal; incessant hemorrhage and acute pain threaten life; an operation, if successful, may result in permanent cure. What motive, then, can avert the hand of the surgeon? Many cases have been reported in which a cure has been obtained. In short, I should not—in ignorance, be it understood, of perforation of cranium—hesitate to remove the growth by operation.

"I will allude to the incidents of my operation, and inquire whether I could have done better. With regard to chloroform, I am convinced that this agent is indicated in operations upon the face; at least, at the commencement, and certain precautions being taken in its administration. Hemorrhage constitutes the most formidable danger; it is rendered almost inevitable by the structure of the tumor. Life is threatened on the one hand by syncope and sudden anæmia, and on the other by the passage of blood into the air-passages. The preventive measures are of two kinds: 1st, we have to suppress or moderate the flow of the blood; 2d, the access of blood to the air-passages must be prevented.

"In order to fulfil the former indication, one may have recourse to one of two proceedings: 1st, to attack the tumor through the narrow natural passages and destroy it gradually, at several times and by different means; 2d, to perform extirpation by two operations—first, to remove the superior maxilla, and to extirpate with the *écraseur* the nasal and maxillary lobes; and afterwards to deal with the pharyngeal lobe and the chief accessible pedicle by means of powerful caustics and galvanism. This operation enables the surgeon to proceed with greater security. In performing operations upon these nasal growths, the surgeon can perform preliminary deligation of the carotid artery.

"M. Blandin, in order to prevent the penetration of blood into the air-passages, performed tracheotomy. Some German surgeons prefer plugging of the trachea and occlusion of the superior orifice of the larynx. M. Brandelenburg introduces into the tracheal opening a metallic canula, to which is fitted a hood of caoutchouc, which can be distended at will, so as to fill up the space be-

¹ Communicated to the *Société de Chirurgie*, Paris.

tween the canula and the wall of the trachea, and thus prevent the entrance of blood. Both respiration and chloroformization are effected by the metallic canula. M. Nussbaum, of Munich, performs a preliminary tracheotomy; then, the respiration being made safe, he introduces a folded compress to the back of the mouth in order to obturate the superior orifice of the larynx. At the end of the operation the tracheal wound is united by a few points of suture."

ART. 182.—*On a Special Form of New Growth on the Nose.*
Rhinoscleron.

(*Wiener Medizinische Wochenschrift*, 1870; *Archives de Dermatologie et de Syphiligraphie*, No. 6, 1871.)

Prof. Hebra has observed this affection in nine subjects (four men and five women). It represents a form of sclerosis very similar to syphilitic sclerosis of the prepuce. In seven cases it was limited to the nose and upper lip; in the remaining two it existed simultaneously on the nose, cheek, and forehead. It forms a flattened tumefaction, elevated about one line or a line and a half above the level of the skin, the borders being sharply cut. The coloration of this tumor varies from the normal tint of the skin to a deep brownish-red tint. The surface of the affected parts is always smooth, but rarely glistening. The most remarkable objective symptom consists in a complete induration of the affected points, which feel almost exactly like ivory. The patients experience but very slight pain, and, as a rule, only when the new formation is localized to the internal surface of the nose, and when prominent parts of this organ are compromised.

The progress of this affection is always very slow, and it continues for several years before it has attained such proportions as to oblige the patient to apply for medical advice. The first case of this kind which Prof. Hebra saw was thought by him to be a circumscribed tubercular syphilide presenting exceptional hardness. Shortly afterwards, another patient came under his care, who presented a similar hard tubercle, and, at the same time, specific ulceration of the throat—a combination which confirmed Prof. Hebra's opinion that the nasal affection was syphilitic in its nature. In both cases a specific treatment was prescribed; under the influence of this the laryngeal ulcerations of the second patient healed, but the nasal induration remained unaffected. Other cases presented the same characteristic phenomena.

The following were the common symptoms observed in the nine cases:—

1. Constantly seated on the nose, and sometimes also in its immediate neighborhood.
2. Extraordinary induration of the parts affected.
3. Very well marked development of the pathological lesion, which is manifested in the form of tubercles, of deep brownish-red projections, or of induration of the normal tissue.
4. These indurations are sharply circumscribed, and there is an entire absence both of œdema and inflammation in the adjacent parts.
5. There is an absence of any visible metamorphosis in the new formation; no degeneration, ulceration, softening, or absorption.
6. Inefficiency of all internal treatment, even when aided by the most energetic agents.
7. The organism remains unaffected, even after the affection has continued for several years.
8. Finally, insensibility and absence of pain when the affected part is touched; there is acute pain, however, whenever the deep red tubercles are pressed.

From histological examinations of the growths made by Dr. Moritz Kohn, it seems that this affection constitutes a form of gliosarcoma, or sarcoma of granulative tissue.

ART. 183.—*Plastic Operations.*

By Dr. LICHTENBERG.

(Medical Press and Circular, Nov. 22.)

At a meeting of the Medical Society of London, on November 6th, Dr. Lichtenberg communicated two cases of rhinoplastic operation. The patients, two females, were shown. He said that he wished it to be clearly understood that he did not bring them forward as models of the plastic art, as he was far from being satisfied with them, but to show that much might be done by the surgeon which of late years had been left to the art of mechanism, or without any interference whatever; albeit a Tagliacozzi in the latter part of the sixteenth century, and a Von Graefe and Dieffenbach in the earlier part of this, will ever be remembered as foremost among those surgeons who particularly cultivated the art of relieving those deformities which being so public must be deemed among the most terrible to those who are the victims. Mrs. K., the first of the two patients, had been for some time under the treatment of Dr. Bäumler, at the German Hospital, as an out-patient for tertiary ulceration of the nose, and being discharged cured, was sent to him for surgical improvement. On examination he found that the septum, the entire left ala, and also almost the entire right ala, were destroyed. She was admitted into the Tottenham Training Hospital, and operated upon on 23d March, 1871. He took a flap from the forehead, but unfortunately he was under the impression that he could not obtain a sufficiently large piece without encroaching considerably upon the scalp, and he merely formed the two alæ, with the intention of providing the septum from the upper lip at a future time, but he found that the nostrils, or rather the nostril, contracted to such a degree that he did not consider it warrantable to produce a new deformity with the doubtful prospect of a tolerably good septum.

The second case came under his treatment in the Tottenham Hospital, and was useful in showing what large doses of iodide of potassium could do when given in these particular cases. The patient had been at different hospitals without deriving any benefit, but directly this remedy in large doses was given the improvement was well marked, and the ulceration rapidly healed. He waited some months to see whether the disease was thoroughly subdued, and operated on the 6th April, 1871. The whole nose, with the exception of some rudiments of nasal bones, was destroyed, as was shown by a drawing made before the operation. He therefore had to form a very large flap from the forehead, but the skin contracted more than he anticipated, and he thought that in these cases the flap can scarcely ever be too large, provided it can be done without creating a larger deformity in order to improve a smaller, and with safety to the patient.

Mr. Francis Mason remarked upon the interest of the cases—no one could help admiring them. When the pedicle was taken from the centre of the nose the supply of vessels was scanty. Was the flap applied to a raw surface or an ulcerating one? In a case at the Westminster Hospital he had made three small flaps, one above the aperture and the others from each side of the aperture, turned these over the opening, and laid the flap forming the nose and taken from the forehead over them. After the patient's discharge a slight ulceration had taken place at the tip of the nose. Now the nose was broader and not so symmetrical as those shown.

ART. 184.—*Accidents Caused by Extracting Teeth.*

By Dr. DELESTRE.

(Gazette Médicale de Paris, No. xiv. 1871.)

Dr. Delestre gives an account of the numerous accidents caused by extraction of teeth. He classifies them as follows: 1. Those referable to the tooth itself, or the neighboring teeth; fracture of the teeth; luxation and fracture of

the neighboring teeth; extraction of the germ of the second dentition. 2. Those that affect the maxillary bones; fracture of the alveolar edge, and complete fracture; luxation of the jaw; lesion of the maxillary sinus. 3. Those affecting the soft parts; tearing and stripping up of the gums; contusion and wounds of the lips; of the cheeks and tongue; emphysema. 4. Secondary accidents; hemorrhages, fluxes, phlegmons, and abscesses; teeth entering the digestive and respiratory passages. 5. Sympathetic affections: neuralgia, tetanus, accidents affecting the organ of sense; accidents to pregnant or to nursing women, and at the menstrual epochs. We will notice particularly only the disturbances of vision, consequent upon changes in the teeth, and operations on those organs. This question has already been studied by Delestre in a memoir presented to the Academy (session of Feb. 17th, 1869). He reports several observations which tend to prove the existence of visual troubles from this cause; he calls attention to the fact that odontalgia is accompanied frequently by a flow of tears and a redness of the conjunctiva, with pain, and winking of the lids. In this case there is, in the first place, an excitation of the nervous filament belonging to the diseased tooth (branch either of the superior maxillary or inferior maxillary nerve); this irritation of one part of the trifacial nerve is transmitted to other parts, and particularly to the ophthalmic branch of Willis; hence, flow of tears, redness of conjunctiva, etc. Hermann Schmidt explains the passing disturbances of accommodation, which accompany the pains in the teeth, on the same side, by the increase of the intra-ocular pressure resulting from a reflex irritation of the vaso-motor nerves of the eye.

ART. 185.—*On Excision of the Tongue.*¹

By GEORGE SOUTHAM, F.R.C.S.

(*British Medical Journal*, August 24.)

After making some remarks on cancer of the tongue, Mr. Southam referred to the difficulty which surgeons frequently experienced in excising the entire organ, or even a large portion of it, for this affection. The safest mode of removal was by the aid of the *écraseur*, but this instrument frequently failed to effect the purpose, in consequence of the shape of the tongue and the peculiar arrangement of its muscles, causing the chain of the *écraseur* to slip towards the diseased portion, in which it often became imbedded before the operation was completed. Some cancerous deposit was therefore left, and, though it might not be in sufficient quantity to interfere with the healing of the wound, usually led to an early return of the affection. To remedy this defect in the operation, Mr. Southam had had constructed a pair of forceps with a movable hinge, which completely grasped the tongue at its root, and confined the action of the *écraseur* to the part where it was first applied. A case was described in which, with this instrument and the *écraseur*, and without making an opening in the floor of the mouth to pass the chain through, the tongue, of which the body was affected with cancer, was excised beyond the foramen cæcum and circumvallate papilla, these structures being included in the separated portion.

Mr. Charles Steele remarked on the great advantage which was gained by not being compelled to open the lip, chin, and symphysis menti, thereby lessening greatly the severity of operation and risk of inflammation of the lungs, &c. He asked the results of Mr. Southam's operations. Mr. Lund said the great value of the instrument was, that it fixed and dragged forward the tongue to a degree which no other would do. Mr. Furneaux Jordan thought that the instrument would prove of service. He asked if Mr. Southam had used two *écraseurs*, one over the dorsum of the tongue, and the other under the tip. There was danger of hemorrhage in using the *écraseur*, for which surgeons must always be prepared. Mr. Maunder said that, to effect the operation without hemorrhage, the chain should be worked slowly, once in the minute. The

¹ Read at the Thirty-ninth Annual Meeting of the British Medical Association.

pain was less than might be supposed, and almost ceased when the chain was drawn tight. Mr. S. Gamgee spoke of the great value of Mr. Southam's instrument, and of drawing the tongue well forward. He narrated a case in which he drew the tongue well forward with Marshall's polypus forceps, and cut off the organ; and, to stop hemorrhage, filled the patient's mouth with ice. Mr. Gamgee also remarked that tumors might be freely removed from the neck of the uterus with the knife, ice being immediately applied; and that the great danger of the *écraseur* was its liability to slip. Mr. Southam, in reply, said he had used his instrument once for removal of the whole tongue, almost touching the epiglottis; also for removal of small portions of the tongue. The recovery had been rapid. He agreed with the remarks about hemorrhage and the *écraseur*; and that a surgeon should be prepared to apply ice, or tie any artery. With his instrument, two *écraseurs* could not be needed. Mr. Southam would be happy to receive any suggestions for the improvement of his instrument.

ART. 186 — *On the Operation of Opening the Larynx by Section of the Cartilages, &c., in order to facilitate the Removal of Morbid Growths.*¹

By ARTHUR E. DURHAM, F.R.C.S.

(*British Medical Journal*, Nov. 25.)

The author related in detail five cases in which this operation had been performed in Guy's Hospital; in three cases by himself, in one by Mr. Bryant, and in one by Mr. Davies-Colley. The results in four of these cases had been eminently satisfactory, free respiration and good voice having been regained. The remaining case was still under treatment. Appended to the communication were more or less complete reports of all the cases which the author had been able to find on record. These cases were thirty-two in number, and, with the five detailed in his communication, gave a total of thirty-seven. In nineteen of these, the operation might be regarded as having been completely successful, natural respiration and voice (though in some instances not normal in tone) having been restored. In seven, partial success was obtained, respiration having been restored, but the voice lost or very seriously impaired. In four cases some temporary relief was obtained. In three, the result might be considered negative—neither good nor harm having been done. The reports of at least two were incomplete. In two cases only, death resulted. In each of these, however, the immediate cause was blood-poisoning. Metastatic abscesses were found in the lungs in one case; in the other, erysipelas and gangrene occurred, and broncho-pneumonia and exhaustive fever ensued, and led to the fatal issue. Comparing the results thus stated with those given by Dr. Mackenzie in his treatise on *Growths in the Larynx*, the author pointed out that death could properly be attributed to the operation in two only out of the nine cases enumerated by Mackenzie as having terminated fatally, these two being the same as those already alluded to. With regard to the other seven cases, the author specified each, and showed that in each the result of the operation was favorable, or at any rate in no degree mischievous, and certainly not fatal. Some of the difficulties liable to be encountered in the operation were then briefly discussed, and the opinion was expressed that such difficulties were really fewer and more easily overcome than appeared to be generally supposed. In conclusion, the author pointed out that it was not necessary to institute any comparison between the dangers and difficulties of this operation and those met with in the removal of growths through the mouth by the aid of the laryngoscope, nor indeed was it at all fair to estimate the comparative merits of the two methods of proceeding by bare numerical statements of the results obtained. If, in any case, removal of the growth by aid of the laryngoscope should appear practicable, the idea of resorting to section of the cartilages could not be enter-

¹ Abstract of a Paper read at a Meeting of the Royal Medical and Chirurgical Society, Nov. 14.

tained until fair trial had been made of the minor operation. In very few, if any, of the cases on record in which the larynx was opened would it have been practicable to remove the growths through the mouth. Indeed, in many instances, numerous abortive attempts through the mouth were made before resort was had to section of the cartilages. With regard to the chances of recurrence, there could be no doubt that the more completely the original growth was removed, the less would be the probability of its reappearance. Neither could there be any doubt that such complete extirpation could be more certainly effected in most cases after section of the cartilages than by any method practised through the mouth. Dr. Mackenzie's conclusions as to the comparative chances of recurrence, as affected by the method adopted, appeared to the author unfair and likely to mislead. Cases of cancer (a malady very likely to recur) were included in one, and excluded from the other, of the sets of cases between the results of which a numerical comparison was made.

Mr. Bryant considered that Mr. Durham had shown the operation to be worthy of attention on the part of surgeons. The operation in the cases described had been performed only because no other means could relieve the patients; tracheotomy, indeed, might have prolonged life for a short time, but the capital operation alone could save it. In cases of simple growth, this effect might be expected to be permanent; in cases of malignant growth, we could expect to prolong life only for a time. With regard to the operation itself, the great object was to bring the parts well into view. He was startled at hearing that the evidence on which Dr. Morell Mackenzie opposed the operation was of a very weak kind; there being, in his nine cases of death, seven where he could not see how the fatal result could be ascribed to the operation. He hoped to hear an explanation from Dr. Mackenzie. Even admitting that death had been caused by the operation in nine cases out of twenty-two, this would be scarcely a fair ground for condemning the operation. He regarded the operation as most valuable; though, of course, no surgeon would perform it if any other means were available for prolonging life.

Mr. Holthouse had performed one of the earliest operations of the kind described, in March, 1864. The patient was a lady, to whom he was called by Dr. Gibb to perform tracheotomy. On the following day he enlarged the opening upwards, and removed a number of mucous growths from the interior of the larynx. The patient recovered her voice, and retained it for several months after the operation; she died at the end of a year, from extension of the original disease.

Mr. Thomas Smith asked whether, in closing the wound, it was necessary to fasten the margins of the thyroid cartilage together, or were sutures through the integument sufficient?

Dr. Pitman remarked that Mr. Durham's five cases were in patients under ten years of age; in Dr. Mackenzie's cases, ninety-six in one hundred were above that age.

Mr. Durham said that in children the removal of laryngeal growths through the mouth was difficult, on account of the narrowness of the passage and the restlessness of the patients. No doubt, in the adult also, the growths were removed in this way in some cases after all other means had failed. The amount of suffering produced by the removal of the growths through an opening in the larynx was much less than that which attended repeated operations by the mouth. He regretted much that Dr. Mackenzie was not present. He had informed him of his intention on that evening to take exception to some of his statements.

ART. 187.—*Growths in the Larynx: the Comparative Advantages of Laryngoscopic Treatment and Direct Incision into the Larynx.*¹

By MORELL MACKENZIE, M.D.

(*British Medical Journal*, August 26.)

The relative advantages of these two methods must be considered in relation (1) to the quickness of cure; (2) completeness of removal and probability of recurrence; (3) danger to life; and (4) restoration of voice. From an experience of one hundred cases treated, a month was estimated to be the average duration of laryngoscopic treatment. External treatment, on the other hand, required only a fortnight. As regards the second question, complete removal was able to be effected in ninety-seven per cent. of the cases which underwent the full course of laryngoscopic treatment, and recurrence took place in about seven per cent. In twenty-eight cases of direct incision, collected from all sources, ten died in a short time; and in the remaining eighteen, the growth was incompletely removed in three cases, and recurrence took place in three cases, or, in other words, in twenty per cent. No death occurred in the laryngoscopic cases; whereas of the twenty-eight treated by external operation, three immediately terminated fatally, six died at the end of a few months, and one from an independent disease. With reference to restoration of function, perfect voice was regained in seventy-seven per cent. of those who underwent laryngoscopic treatment, and a more or less serviceable voice was restored in sixteen per cent. Of the eighteen cases who survived direct incision more than a few months, only nine completely recovered their voice, four had persistent hoarseness, and six permanent aphonia. Consideration of the above statistics established the paramount value of laryngoscopic methods of treatment, and justified one in saying that extra-laryngeal treatment ought never to be adopted unless there were danger to life from suffocation or dysphagia.

ART. 188.—*On Catheterism of the Eustachian Canal.*²

By R. HIBBERT TAYLOR, M.D.

(*Liverpool Medical and Surgical Reports*, October.)

The idea of attempting to cure deafness through the medium of the Eustachian canal seems to have occurred first (said the author) to a postmaster at Versailles, named Gurgot, more than a century ago. By means of a bent sound introduced through the mouth, he at last succeeded in washing out the faucial orifice of the canal, and thus relieved his deafness. An account of this invention was submitted to the Academy of Sciences, at Paris, in the year 1724, but it does not appear to have led to any further result. Twenty years later an English surgeon, named Cleland, renewed the practice, and improved upon it by introducing the catheter through the nose. The instrument he employed is figured in the *Philosophical Transactions* for 1741, and resembles a small catheter pierced with lateral eyes at its distal extremity; but this would have the disadvantage of giving to any fluid injected through it a direction differing from that of the Eustachian canal. Although Cleland describes the instrument and the mode of using it, he does not say that he had employed it himself with success. The surgeons of Montpellier experimented with Cleland's instrument, but could not succeed in injecting the canal until they had made some modification in the catheter, probably by substituting a single opening at the end for the lateral eyes.

In 1755, Mr. Jonathan Walker published in the *Philosophical Transactions* a short memoir entitled "New method proposed to restore the hearing when

¹ Read at the 39th Annual Meeting of the British Medical Association.

² Read at the Liverpool Medical Institution, Session 1870-71.

injured from an obstruction of the Tuba Eustachiana." Walker states that he was indebted to Mr. Jn. Douglas, the anatomist, who demonstrated in his class the possibility of passing a catheter through the nose to the Eustachian canal, for the idea which he reduced to practice on the living subject. Walker used a silver pipe, of about the size and length of a common probe, to which an ivory syringe was fitted when required. He appears to have been led to this practice from having observed at the post-mortem examination of a young man who had been deaf for several years and had died of variola, that the Eustachian canals were obstructed by thick mucus, while the structures of the ear were otherwise healthy. Of six persons upon whom he operated, five were said to have derived more or less benefit. One of the instances is remarkable, as the man had been deaf for eighteen years, and could only distinguish the voice of a person with whom he was familiar. After using five injections, separated by intervals of one or two days, he was able to hear the voice when moderately elevated, and could take part in ordinary conversation; provided the room was quiet.

Wood, in his treatise on diseases of the ear, narrates some striking cases in which a cure was effected from a condition of almost complete deafness. In some of these the injection was made through the nostril into the faucial extremity of the canal, and in others the membrana tympani was perforated, and the fluid passed from without inwards towards the cavity of the tympanum. Cures resulted from both of these methods. Walker does not mention what fluid he used for injecting the ear, but we may presume it was tepid water. Itard says he employed both plain and sea water heated to the temperature of an ordinarily warm bath.

Professor Trötsch, of Wurzburg, in his excellent work on diseases of the ear, states that he injects the Eustachian tube with air both as a means of diagnosis and of cure; and the latter injection he considers useful in clearing the canal of mucus or any other removable obstruction. He has not observed any injury to result from this treatment, but regards the benefit derived as in general only temporary. He uses the catheter for introducing wires into the ears, in the application of electricity. Trötsch objects to the employment of liquids for injection, and uses gases only.

Toynbee recommends an instrument of his own invention, termed an "otoscope," for diagnosing the condition of the internal ear. It consists of an elastic tube, one end of which is introduced into the ear of the patient, and the other into that of the operator, while the patient, closing his mouth and nose, attempts to inflate forcibly the tympanic cavity. He agrees with former authors as to the utility of injecting the Eustachian canal, but recommends caution in introducing a stream of air into the cavity of the tympanum, as fatal effects have in some instances resulted from its unskilful use.

Wilde, of Dublin, employs the Eustachian catheter for diagnosis when the patient is unable to inflate the membrana tympani. He does not believe that lotions or vapors, when introduced through the catheter, ever reach the cavity of the tympanum, and he has no confidence in the treatment of what is termed "nervous deafness" by injections of ether or anything else. Trötsch and Wilde employ an "air-press," for injecting the Eustachian canal; a rather formidable-looking condensing machine which requires the use of considerable apparatus, besides being open to other objections.

"My own experience," said Dr. Taylor, "although hitherto not very extensive, has led me to form a favorable opinion of injection of the Eustachian tube with air, and I should not hesitate to perform it in any instance in which the patient was unable to inflate the tympanum. I always use a catheter passed through the nostril, and blow the air into the faucial extremity of the canal. The operation is thus rendered very simple, the force of the current can be easily and surely modified according to circumstances, and the patient is free from all apprehension at the sight of much apparatus. I have not tried the injection of water or other fluid into the canal, but I see no valid objection to its employment, if conducted with caution, and it may easily be effected by means of a moderately-sized syringe fitted to the wide extremity of the cathe-

ter. The difficulty of introducing the beak of the catheter with certainty into the faucial orifice of the canal is no doubt considerable, and requires both dexterity and experience; but these obstacles are not greater than most persons can overcome with perseverance and practice."

ART. 189.—On Fractures of the Odontoid Process.

By STEPHEN SMITH, M.D., Surgeon to Bellevue Hospital, New York.

(*American Journal of the Medical Sciences*, October.)

Dr. Smith records several cases of fracture of the odontoid process, on reviewing which, he says, the following general conclusions are deducible:—

Mode of Death.—The mode of death varies very much in fracture of the odontoid process.

1. It may be instantaneous, from pressure of the broken process upon the medulla oblongata. In these cases the victim is literally pithed.

2. Pressure of the process may be gradual. In such cases the pressure may be upon the anterior columns of the cord, when paralysis of motion of the extremities is first experienced—generally in one hand first, then in the foot of the corresponding side, and finally complete paraplegia of all the parts below the middle of the neck occurs, and death follows from exhaustion.

3. Displacement of the atlas upon the axis may suddenly occur, and death follow from compression of the cord.

4. Displacement of the atlas may be very gradual. In these cases, and they are quite numerous, the patients have maintained the head in its position for a considerable period without any marked symptoms; whenever they have continued to move about, grave symptoms have finally supervened from a gradual luxation of the atlas upon the axis. It is surprising to what an extent the spinal canal may be encroached upon, and the functions of the cord may be more or less preserved. In one case it was three-eighths, and in a second one-fourth, of an inch in diameter.

Symptoms.—If the function of the odontoid process is to poise the head upon the spinal column, we should naturally anticipate that the most important and constant symptoms of fracture would be those which show that this support is lost. And such is the case. Patients carry the head as if steadying a weight upon it, unsupported. In all their movements, the centre of gravity of the head is carefully maintained in its proper relations to the apex of the spinal column. The foramen magnum being a little posterior to the centre of the base of the skull, patients generally elevate the chin, in order to preserve the centre of gravity. Whenever they wish to elevate the eyes above the ordinary level, they support the occiput in the hand, and in looking downward they support the chin in the hand. If the relations of the head to the spine are disturbed by a shock, they seize the head upon the sides with both hands, and hold it firmly for a time. On attempting to rise from bed they elevate the head with the hand applied to the occiput, and in bed move the head cautiously with the hands.

Other symptoms are especially related to the complications which may exist.

External appearances are not characteristic, and are indicative of changes in the position of the atlas or axis.

Whenever the fracture occurs from chronic diseases of the articulations, difficulty of swallowing, excessive pain of head and neck due to pressure upon the first cervical nerves, inability to rotate the head, and, finally, all the symptoms of separation of the process or the odontoid ligaments.

Prof. Rust, who recorded thirteen cases of disease of the articulation of atlas and axis, has given a very perfect description of the symptoms which are present when the odontoid process yields or its ligaments are destroyed. There can be no doubt that in his cases this fracture actually existed, or the odontoid ligaments had separated, for they are the counterpart of the cases alluded to:—

"After a certain length of time, the pain becomes more violent when the

head is inclined to one side; . . . difficulty of swallowing and respiration continues to increase, and the pain, which is concentrated about the occiput, becomes almost insupportable on the least motion of the head. The head now falls on one shoulder, and usually on the right one, because the disease most frequently affects the left side of the vertebræ. . . . The pain in swallowing, speaking, and breathing recurs; the head becomes inclined a little backward, or to the side opposite its former position. The patient cannot obtain ease in any position; and he can neither rise nor lie down without supporting his head with both hands."¹

The reviewer says:—

"We hardly ever witnessed so distressing a representation of the human visage; the fixed teeth, curled lips, obliquity of the eyes, contracted brow, rugous forehead, erect hair, and the sharp lines formed by the muscles in consequence of the state of emaciation."

Prognosis.—Although most of the cases reported were fatal, a review of these records shows that the prognosis in fractures of the odontoid, if not attended with immediate displacement of the atlas, is very favorable. Cases which have been recognized and properly treated have recovered. In other instances, not recognized, the patients have lived for considerable periods, the fatal changes taking place very gradually. These changes were such as could at any time have been arrested by proper appliances.

Still other cases of recovery are recorded in which the process separated and was discharged. Anchylosis of the axis and atlas generally follows recovery.

Treatment.—The treatment, as in all fractures, must be absolute rest to the fractured bone. This can best be secured by an apparatus which not only fixes the head in its central position, but which supports the upper cervical vertebræ firmly in their proper relations to the head and to each other. Mr. Hilton² beautifully illustrates this latter point in a case of supposed fracture of the odontoid process, in which, when support was removed from the upper part of the neck, a sense of suffocation followed, threatening immediate death. The patient may be placed in a recumbent position, with sand-bags by the side of the head and a fold of cloth under the neck, or a splint may be applied to the back and head, as was practised by Dr. Bayard, with success. The latter is preferable, as it allows the patient to move about.

ART. 190.—Case of Deafness of Twelve Years' Duration; Perforation of both Membranæ Tympanorum, with Mucous Accumulation; Treatment, with Good Results.

By WM. VAWDREY LUSH, M.D. Lond., F.R.C.S.

(*The Lancet*, Nov. 18.)

The following case well illustrates the utility of the treatment advocated by Mr. Hinton, of Guy's Hospital, and by Mr. Dalby:—

"E. F., aged fifteen years, has been deaf for twelve years; but it is stated that once in two years she hears remarkably well for a day or half a day.

"First seen by me November 1st, 1870. With either ear she only hears watch in contact. Left meatus much sodden. Membrana tympani opaque; below and to the right a granulating-looking surface. Right meatus, a similar appearance; the granulating surface looks as if situated on the membrane. On the patient inflating the Eustachian tube, air passed through both membranæ tympanorum, proving the existence of an aperture in both. Hearing distance after inflation: Right ear, one inch; left, seven inches. Ordered the following powder: bicarbonate of soda, two ounces; loaf sugar, one ounce;—a teaspoonful to be mixed in a tumbler of water, and a third part to be drawn

¹ Review of his work on "Arthrocælogy," *London Med. and Phys. Journal*, vol. xli. p. 342.

² *Lectures on Rest and Pain.*

up through the nose into the back part of the throat, and spat out through the mouth. This is to be done three times a day. After each time patient to blow her nose well. (For this treatment I am indebted to Mr. Hinton.) Both meatuses to be syringed three times a day with the same mixture, and then dried carefully.

"Nov. 4th.—Hearing distance: Right ear, three inches; left, twelve inches, faintly.—7th: Right, two inches; left, fifteen inches, faintly.

"On clearing the discharge from the right meatus, I distinctly saw a raspberry polypus nearly entirely obstructing the view of the membrana tympani. I removed the greater portion of this polypus piecemeal at different times, generally applying powdered talc afterwards. The patient still continued the use of the lotion.

Feb. 9th, 1871.—Hearing distance: right ear, nine inches, faintly; left, thirteen inches. Air passes through both membranæ tympanorum.

"I last saw the patient on March 24th. With either ear she could then faintly hear my watch at ten inches distance. She was said to have a cold, air not passing through the ears; otherwise could hear better.

"On the second of the present month (November) the mother of this patient called upon me, when she informed me that her daughter could hear 'almost better than other persons.'"

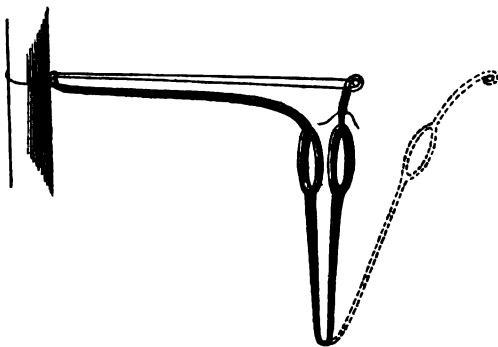
(B) CONCERNING THE TRUNK.

ART. 191.—*On Varicocele and its Treatment.*

By JOHN WOOD, F.R.C.S., Surgeon to the King's College Hospital, and Professor of Surgery in King's College.

(*British Medical Journal*, Sept. 16.)

In a clinical lecture on this subject, after noticing briefly the general pathology, etiology, and differential diagnosis of varicocele, Mr. Wood remarks that the treatment he has lately carried out in cases of this disease consists in the application of the metallic wire-pressure, applied subcutaneously, and with very little disturbance of the parts, by means of a new instrument he has devised and carried out, with the help of Mr. Matthews, for the application of a con-



tinually acting spring traction. The very ingenious apparatus of M. Ricord was previously the most successful attempt to effect the same results; but it acted upon a silk or hempen ligature, applied in a peculiar manner round the vein, and had not the advantages of metallic pressure. This apparatus is ponderous, unwieldy, and requires screwing up afterwards. Mr. Wood's instrument consists of a strong, steel, highly-tempered spring, acting like the spring of a pair of dissecting forceps. One limb carries at the end a thin round steel

shaft, about an inch and a half long, which ends in a transversely oval and obliquely placed eye, for transmitting the wire snare or loop which encircles the vein. The other limb terminates in an arm or hook, round which the ends of the wire are twisted and fastened. The rings upon the two arms are for the purpose of giving a firm hold to the finger and thumb while compressing and closing the spring (as shown at the middle of the figure), till the ends of the wire are fastened upon the upper limb. The dotted lines at the outer part of the figure show the upper arm when at the extent of its action; and its distance from the closed arm shows the extent of transit of the wire to be more than is necessary to drag it clean through the inclosed vein. The steel shaft which carries the wire is pressed down close upon the vein through the puncture, at which the ends of the wire emerge. The puncture is left uncovered for the escape of discharge which may form, for which the shaft of the instrument and the wire form a direct conductor. Mr. Wood has found it better, also, so to arrange the punctures that the one through which the instrument passes shall be the most depending point in the track of the wire, so that no accumulation of discharge is possible within the wound. This is a point of much importance to obviate any subsequent trouble. It is also important, as Mr. Wood has proved experimentally, to provide that no pressure or obstruction be placed at the puncture through which the wire emerges; but that allowance be made for any swelling of the parts around which may occur. This is effectively provided for by the length of the steel shaft, and the elevation of the counter-pressure from the surface of the wound. Any instrument which covers over, obstructs, and presses upon the puncture of the skin, is objectionable for this reason. In large cases, of course, a larger instrument and a stronger spring may be required. In small cases, a spring of twisted steel wire, somewhat like that of a mousetrap, has been found sufficient. Such an instrument Mr. Wood has found to act admirably in cases of varicose saphena.

The wire used is the best and toughest iron wire, as thin as may be judged strong enough to bear the tension of the spring. It is first dipped in carbolized oil, and passed by means of a long needle, in the ordinary subcutaneous way, first under the veins, and then back again over the veins, between them and the skin, entering, re-entering, and emerging through the same cutaneous apertures. The ends are then drawn as tight as possible; the loop sinks through its puncture into the tissues out of sight; and the spring-tractor is finally fixed by passing both ends of the wire through the oval eye, pressing down the spring firmly between the left thumb and forefinger, winding the wire tightly around the hook, and fixing it there.

In most of the cases treated by Mr. Wood, the spring-tractor was kept on for a week or ten days, and no pain was complained of. Little or no discharge occurred, and the patients were discharged cured a few days after the removal of the wires.

In all the cases there was a very great amount of thickening from fibroid deposit in the track of the wire ligature, producing a great amount of lateral support to the weakened vessels, and persisting for a considerable time.

ART. 192.—*Operations upon Hemorrhoids.*¹

By WILLIAM ALLINGHAM, F.R.C.S., Surgeon to St. Mark's Hospital
for Fistula.

The author of this excellent and most valuable work, in speaking of the relative merits of the ligature and the clamp and cautery, gives the preference to the ligature, for which he claims the following advantages:—

1st. The rapidity with which it may be executed. He has often operated upon four or five hemorrhoids, returned them, and removed redundant skin, in one minute and a half or two minutes.

2d. There is only a very small amount of tissue included in the ligature—in fact, little more than the vessels supplying the tumor.

¹ Diseases of the Rectum. London, 1871.

3d. At least three-quarters of the wound is a simple incised wound, which heals rapidly, only the small portion included in the ligature having to slough away.

4th. The ligatures are tied a considerable distance from the anus, so that, when returned into the bowel, they lie above the internal sphincter, where the sensibility of the mucous membrane is not acute, and consequently the pain and irritation after the operation are reduced to a minimum.

5th. The operation is wonderfully free from danger to life, and its results generally are almost always satisfactory.

Mr. Allingham does not think that in the whole range of surgery there is any procedure worthy of the name operation which can show a greater amount of success.

In describing the mode of treating hemorrhoids and prolapsus by the ligature, Mr. Allingham refers to the operation about to be described, and not to the usual method of applying the ligature by transfixion of the base of the pile, and tying it in halves.

"This is the way in which the operation should be performed. I will premise, that in all operations about the rectum, but more particularly in cases of piles, it is essential that the alimentary canal should be thoroughly cleared before operating. The patient being thus prepared, administer an enema of warm water, and direct him to strain the piles well down while evacuating the injection; this being accomplished, place the patient upon a hard couch or mattress in a good light; the position should be on the right side, with a little tendency to roll over on to the stomach, the knees are to be drawn up to the abdomen, and if the patient has the courage to strain down during the operation, he will very much facilitate the manipulations. The assistant should stand with his back towards the patient's head, and raise the upper buttock with his right hand; at the same time, by hooking his elbow over the pelvis, he can keep the patient in position. The surgeon then with a vulsellum or pronged hook seizes the hemorrhoids one after another, draws them down, and then with a pair of sharp, strong spring-scissors separates the pile from its connection with the muscular and submucous tissue upon which it rests; the cut is to be made in the sulcus or white mark which is seen where the skin meets the mucous membrane, and this incision is to be carried up the bowel, and parallel to it, to such a distance that the pile is left connected by an isthmus of vessels and mucous membrane only.

"There is no danger in making this incision, because all the large vessels come from above, running parallel with the bowel, *first beneath the mucous membrane*, and thus enter the *upper part* of the pile. A well waxed, strong, silk ligature is now to be placed at the bottom of the deep groove you have made, and the assistant then drawing out the pile with some decision, the ligature is tied high up at the neck of the tumor as tight as possible. If this be done, *all the vessels must* be included. The silk should be so strong that you cannot break it by fair pulling. A portion of the pile may now be cut off, taking care to leave sufficient stump beyond the ligature to guard against its slipping. When all the hemorrhoids are thus tied, they should be *returned thoroughly* within the sphincter; after this is done, any superabundant skin which remains apparent may be cut off; but this should not be too freely excised, for fear of contraction on the healing. An injection of liq. opii sedativus may be administered. I always place a pad of wool over the anus, and a tight T-bandage, as it relieves pain most materially.

"After the operation, the bowels should be confined for three or four days by an astringent draught, such as: pulv. cret. aromat. ℥j; tinct. opii ℥xv; sp̄t. æth. nit. ℥j; mist. camphoræ, ad ℥jss. To be taken night and morning, or three times in the day, for two days. This will very much assuage pain, prevent the tendency to strain, and keep the bowels confined. The diet at first should be light, no alcohol at all should be taken; perfect rest in the recumbent position should be enjoined. On the third or fourth night a mild aperient may be administered, and after it has acted a more liberal diet may be allowed."

Mr. Allingham thinks it advisable that the patient should keep lying down until the ligatures separate, which almost invariably takes place about the sixth

or seventh day. *Active exertion*, even after the separation of the ligatures, is to be deprecated until the sores left in the rectum are quite healed; a fortnight is generally about the time required to accomplish this.

ART. 193.—*Radical Cure of Fistula in Ano.*

By EDWARD C. HUSE, M.D., of Rockford, Illinois.

(*Medical Record*, March 15.)

Dr. Huse recommends the saturated ethereal tincture of iodine for this purpose. Its advantages over the officinal or alcoholic tincture, he says, are obvious. It is not only *stronger*, and thereby excites inflammatory adhesion in the walls of the tube, but the ether evaporates almost momentarily, and a pure coating of iodine is left along the fistulous track, which doubtless encourages absorption.

The instrument he has used is an ordinary hypodermic syringe, with small silver canula, which may be readily bent to correspond with the direction of the sinus.

The mode of operation is as follows: After exploring the fistula with a *very small* probe (the ordinary probe of the pocket case is far too large), after determining its course and extent, the patient is to be placed in a good light, and a glass rectal speculum introduced, with its fenestrum opposite the internal orifice of the fistula. The canula is now bent to the required curvature and introduced, when the syringe, filled with tepid water, is screwed on, and the surface thoroughly cleansed of all extraneous matter. This step is not only essential, but serves to allay timidity or dread of the subsequent operation.

Next, by pressure, the fistula in its whole extent should be dried out, and the iodine will thus come in direct contact with its walls. Introduce now into the speculum a quantity of carded cotton. This will absorb any of the iodine which might otherwise be injected *through* and injure the mucous membrane, and by its characteristic stain will serve to show the completeness both of the fistula and of the operation.

The canula may now be re-inserted and the injection made. It should be done *slowly*, and at the same time the canula gradually withdrawn. Every part of the surface will thereby be reached.

The operation, which is not very painful, should be premised with a cathartic and followed with a full anodyne as ordinarily with the time-honored knife method. The patient need not be confined to his bed, or room, even for an hour.

Thus far Dr. Huse has performed this operation four times, and as remarked above, with immediate and complete success. The patients were, all but one, below thirty years old. One was tuberculous, but no appreciable injury accrued from thus checking what we were once told is in phthisis a conservative drain. In his first case, a clerk, aged twenty-three, there was a dense and almost cartilaginous state of the fistulous wall, and the injection had to be repeated; but in the others "sitting" alone was called for.

ART. 194.—*Strangulated Hernia in a Man aged Eighty-two Years; Subcutaneous Pneumatic Aspiration; Easy Reduction; Cure.*

By Dr. DUPLONU.

(*Gazette Hebdomadaire*, No. 23, 1871.)

"On August 3, 1870, I was called to M. G., an old man eighty-two years of age, who for more than twenty years had suffered from pulmonary catarrh, and had had for one month only an inguinal hernia on the right side, which appeared during a fit of coughing. His general health was good, and the mind clear; the functions were generally in good order, with the exception that there was a marked tendency to constipation. On two occasions a medical man had previously been called in to reduce the hernia. On July 30th, the hernial tumor

again became irreducible, it had increased in size, there was constipation, and also some colic. Simple taxis was tried, and afterwards repeated on the patient in a warm bath, but without success. M. Léon, who was called in on the following morning, attempted to reduce the hernia with the patient under the influence of chloroform, but failed. The symptoms increased in severity, and on the 3d of August I went prepared to perform an operation.

"The patient then complained of acute spontaneous pain radiating from the inguinal canal towards the interior of the abdomen. The abdomen was slightly distended, but not very painful on palpation. The tongue was dry; there was intense thirst, and drink was rejected by vomiting. The vomited matter had not any fecal appearance. There was complete constipation. The pulse was eighty-six, intermittent and small. The strength of the patient was considerably reduced; the countenance was changed and anxious; the extremities were slightly cold.

"The hernial tumor, which was of the size of a hen's egg, reached to the bottom of the scrotum. It was not very hard, but still unyielding; it was sonorous on percussion, and under pressure gave a distinct sensation of gurgling, which indicated the presence of gas and fluid. The integument covering the hernia preserved its normal color; it was thin, not much loaded with fat, and glided readily over the surface of the tumor. The case was clearly one of enterocele.

"We endeavored in vain to reduce the tumor by pushing back the gas and fluid into the interior of the abdomen by methodical compression directed from the fundus to the neck of the sac. The hernia, the tension of which was far from being considerable, could be pushed into the inguinal canal, but it was impossible to pass it beyond the internal ring. In presence of this unexpected resistance, and well aware of the dangers of an operation in an old man of this age, I conceived the idea of withdrawing through a harmless puncture the gaseous and fluid contents of the sac. I employed M. Charrière's aspirator, and introduced No. 2 trocar into the most dependent, and, at the same time, the most prominent part of the tumor. The first aspiration withdrew nothing but gas, but I was still encouraged to persevere. I left the needle in its place, and then applied a fresh aspirator, by means of which I withdrew about a spoonful of fluid fecal matter of a deep brownish-yellow color and a characteristic odor. A third application enabled me to bring away about an equal quantity of similar matter. The tumor was now softened to such an extent as to allow me to rub the walls of the intestine together. Reduction was now a very easy matter, and I did not hesitate to practise it, as but a simple prick had been made in the intestine when in a state of distension. The slight fraying of the pelvis would naturally efface this on the return of the coats of the intestine to a condition of flaccidity. One had to deal with a lesion which was quite subcutaneous, and it seemed to me that if Velpeau and others had been able without much regret to replace in the abdomen intestine which had undergone perforation, I could flatter myself with the hope that in this case there would be no damaging discharge into the peritoneum.

"The success of this treatment surpassed my expectations. I restricted myself to prescribing some *bouillon* and a mixture containing a small quantity of opium. On the evening after the operation the patient, without the help of any purgative, had a profuse stool; the colic was relieved, and, up to the present time, that is to say, for a period of ten months, there has not been the slightest bad symptom in connection with the hernia.

"This method of aspiration, the indications for which can be learnt only by experience, seems to me to be especially applicable in cases of large enterocele affected with secondary strangulation due to inflammation or to over-distension. I have made up my mind not to operate for the future on cases of this kind without having recourse previously to this harmless proceeding, and, if by chance I should recognize the presence in the intestine of matter too solid to be readily drawn out by the aspirator, I would not hesitate to soften it by the injection of some water.

ART. 195.—*On a New Mode of Treating Hydrocele and Cysts.*¹

By M. MONOD.

(Gazette Hebdomadaire, No. 37, 1871.)

As the immediate cause of cysts or accumulations of serosity in normal sacs resides in the predominance of secretion over absorption, the treatment should be directed to the re-establishment of the disturbed equilibrium. M. Monod, about three years ago, was consulted by an individual who had a large goitre; he diagnosed a cyst of the thyroid body, and, to confirm this view, made an exploratory puncture with a small trocar, and let out some lemon-colored fluid. When the cyst had again filled, the following minor operation was performed; by means of a hydrocele trocar, about a teaspoonful of serosity was drawn off and an equal quantity of alcohol at 40 degrees injected. The tumor soon diminished in size. Sixteen days afterwards, another injection was made. At the end of the following month resolution was complete. The patient remained cured.

A patient came under M. Monod's care for the treatment of hydrocele. A small quantity of serosity was removed, and a gramme of alcohol injected. Eight days afterwards, when the tumor had diminished in size, a second operation was performed, and fifteen days later, a third, which resulted in complete and permanent cure. In another case of large hydrocele, a tablespoonful of lemon-colored fluid was withdrawn and a gramme of alcohol injected. This patient, like the two former, was able to resume his occupation immediately after the operation. Some days afterwards a second puncture was made, which ended in complete disappearance of the fluid. Finally, in a case of hydrocele of the size of a hen's egg, puncture and injection resulted in almost total diminution of the fluid. M. Monod states that by his proceeding the tunica vaginalis is not destroyed, but is brought back to its normal condition. He thinks that his treatment is applicable in cases of hydrorachis, cysts of the ovary, and hydrarthrosis.

ART. 196.—*Remarks on the Differential Diagnosis of Pelvic Abscesses.*

By Prof. KÖNIG, of Rostock.

(Archives der Heilkunde, 1870; Schmidt's Jahrbücher, No. 4, 1871.)

The author has had opportunities of observing in the deep parts of the iliac fossæ many kinds of abscesses, some of local origin, and some formed by pus gravitating from superior regions. For explaining the mode of extension of an abscess in the various pelvic layers, he considers the anatomy of the parts and anatomical investigation by means of injections should be taken into consideration in connection with clinical research. He was particularly led to take this view by reading Henke's *Studies on the Extent and Connection of the Connective-tissue Spaces in the Dead Subject*. Moreover, Professor König found that the spontaneous openings of iliac abscesses present a somewhat decided typical form, and he considers that attention ought to be paid to the higher or deeper position of the openings on the anterior surface of the thigh, and that the knowledge of the openings by which the abscess is emptied will allow an inference as to the passage which the pus must take in order to open at this spot. By such knowledge as this, the diagnosis of abscess in several parts of the body is much facilitated, and the use of the probe may frequently be dispensed with. Professor König then details what, on the bases of his clinical observation and anatomical research, seems to him to be of importance in the diagnosis and treatment of abscess along the course of the ilio-psoas muscle, and with special regard to the circumstance whether the abscess be strictly

¹ Communicated to the Société de Chirurgie.

a local one in its origin, or a collection of pus which has passed from a higher or deeper region. He divides these abscesses into three groups:—

1. Sub-serous abscesses of the iliac fossa.
2. Abscesses along the course of the psoas muscle; psoas-abscesses.
3. Abscesses along the iliacus muscle; iliac abscesses.

The following are the chief points in the diagnosis of *sub-serous abscesses*:—

1. These are generally acute suppurations existing in casual connection with the puerperal condition.
2. The swelling is quite superficial; with its base it lies near the inner two-thirds of Poupart's ligament, and internally it is connected with the inner margin of the psoas.
3. As by a relatively small collection of fluid the peritoneum at its lowest fold lying near Poupart's ligament is pressed inwards and upwards into the peritoneal cavity, the abdominal respiratory movements at this point disappear. The respiratory line of the abdomen is moved upwards, and to an extent exactly corresponding to the displacement of the lowest fold of the peritoneum.
4. Should one have the opportunity of observing a pelvic abscess of this kind after the appearance of fistulæ, one can after the determination of the general diagnosis of pus in the pelvic cavity conclude from a *high* situation of the fistulæ that the abscess is sub-serous.

The opening of these abscesses may generally be delayed until the pus has approached close to the integument. There is rarely extensive fluctuation. When the pus has reached the subcutaneous connective tissue, there will generally be found small soft depressions surrounded by hard oedematous tissue. Should any severe symptoms, as acute pain and high fever, necessitate the making of an early opening, this may be done above Poupart's ligament as high as the above-mentioned respiratory line through the different layers of the abdominal wall, without danger of wounding the peritoneum. The most preferable spot is the juncture of the inner and middle thirds of Poupart's ligament, where, with exudation of even a few ounces of pus, the peritoneum is pushed inwards for about two centimetres. In serous abscesses the fistulæ lie above or in Poupart's ligament, or again below this structure.

2. Abscesses along the course of the psoas muscle.

- (1) These are usually gravitation abscesses associated with symptoms of spinal disease or of pleuritic exudation.
- (2) The swelling is deep-seated and often marked by intervening intestine or by tension of the abdominal muscles. When it can be felt, it is observed to follow the course of the psoas.
- (3) It is very much more frequently than the first form of pelvic abscess associated with painful contraction of the thigh.
- (4) The peritoneum is not pushed into the peritoneal cavity; hence the respiratory line is not elevated.

The abscess usually opens at the lower border of the psoas, or still more internally. Fistulæ lie under Poupart's ligament at the inner edge of the psoas tendon.

3. Abscesses in the course of the iliacus.

These abscesses may, with regard to their *genesis*, be arranged in the following groups:—

- (1) There are acute abscesses spontaneously developed in the iliac fossa. Those observed by Prof. König have been periosteal abscesses of the ilium.
- (2) There are gravitative processes of a chronic nature.
 - (a) Abscesses derived from the hip-joint after perforation of the acetabulum.
 - (b) Abscesses from the dorsal or lumbar spinal regions which have made their way along the psoas muscle.
- (c) It appears that abscesses from one vertebra—viz., the last lumbar, regularly pass into the iliac fossa (that is, when they do not sink along the sacrum into the smaller pelvis) without affecting the psoas muscle. The anatomical reason of this is, that the last lumbar vertebra has no connection with the psoas, since the muscle does not arise from this bone. Prof. König injected with fluid the loose tissue at the side of the body of the last lumbar vertebra, between this bone and the psoas;

the fluid passed under the psoas and along the course of the ilio-lumbar artery and then occupied the iliac region. This course, as the author has observed and afterwards confirmed by post-mortem examination, is the one taken by abscesses originating in the disease of the last lumbar vertebra.

- (d) Sometimes abscesses of the pleura or purulent collections originating in the perinephritic tissues descend along the course of the quadratus lumborum under the fascia iliaca. These abscesses, however, generally perforate at the edge of the quadratus before they have reached the pelvis.

The following are the chief points in the diagnosis of iliac abscess:—

- (1) They are rarely acute and then usually periosteal abscesses of the fossa. In the great majority of cases they are chronic gravitation abscesses.
- (2) The swelling is chiefly characterized by swelling of the concave portion of the ilium. This can be best made out by seizing the bone by the anterior superior spinous process, and then with gradual pressure passing the finger of the same hand into the iliac fossa. It will then be found that the swelling approaches almost to the centre of Poupart's ligament, and that it follows upwards the course of the iliacus muscle. These signs are most characteristic in cases of caries and necrosis of the ilium: here the swelling is generally hard and relatively free from pain. The peritoneum at the anterior spine, and near the outer part of Poupart's ligament, is raised when the fascia iliaca, much stretched at its margin, is elevated by exudation. In this region the abdominal respiratory line may be observed to be elevated. The elevation may attain the extent of that noticed in sub-serous abscesses.
- (3) After discharge of the abscess the fistulæ appear to have quite a regular situation on the thigh, so that it is always permissible from this position of the fistulæ to diagnose iliac abscess. They generally lie low under Poupart's ligament on the outer side of the iliac, and near the inner edge of the tensor fasciæ, and at either margin of the sartorius, as low down as the middle of the thigh.

The treatment of these abscesses consists at first in determining the best place for making an opening. The most fitting spot for the discharge of the pus is one lying within the pelvis. There the spot most free from danger is one above the anterior superior spine, where the peritoneum is almost always raised up. In cases of sub-periosteal abscesses, one separates the muscular fibres from the edge of the fossa, and then penetrates deeply. In sub-fascial or sub-muscular abscesses, one seeks to hit the purulent collection in the higher layers. On account of the coexistent tough thickening of the fascia and the sub-serous tissue, an operation of this kind is very difficult. Incisions under Poupart's ligament, when there are no fluctuating points there, can hardly be recommended. The communication with the pelvis is often very small, the connective tissue in the neighborhood of the fistulous passages is thickened and tough; and when one opens up the fistulous canal the hemorrhage from the long narrow wound, which is surrounded by rigid tissue, is very difficult to restrain. An incision in cases of necrosis often forms a passage by which the sequestrum may be removed. An opening at this part is, however, often necessary in cases where deep fistulæ already exist. There is no free outlet for the pus, which stagnates in the thigh and becomes decomposed, making new passages here and there. Abdominal pressure, especially in strong expirations, coughing, &c., contributes very much to the emptying of pelvic abscesses.

ART. 197.—*The Restoration of the Perineum.*

By J. MATTHEWS DUNCAN, M.D.

(*Edinburgh Medical Journal*, November.)

The operation which Dr. Matthews Duncan describes has received various names. That which he uses, and which forms the title to this paper, is open to

some objections; and yet the author prefers it because it indicates the chief object of the proceeding.

In cases of laceration of the perineum the operation may be undertaken at the time of the accident or after the injured parts are quite healed. Dr. Duncan has done it successfully at both times, and if circumstances are all favorable, he recommends its performance at the time of the accident. Yet he thinks a successful result can be more securely predicted of a delayed operation than of an operation done at the time of the injury. It is to be remembered that the perineum often appears to the inexperienced to be extensively injured during labor, and so as to demand operative interference, when truly very little harm has been done; as is made apparent by examination after the parts are healed.

The instruments required for the operation are the following: a sharp bistoury, a dissecting forceps, a catch forceps, ligatures for arteries, needles armed with silver wire for stitching, and a scissors. Besides these, the ordinary appliances for all operations must be at hand, as sponges, &c.

The operation should be done soon after a monthly period has passed; and, in preparation for it, the bowels should be freely evacuated. On the morning of the operation the patient should have only soup or some light nourishment, in order that the vomiting so frequently accompanying and following the induction of anæsthesia, which is maintained during the operation, may be kept within the narrowest bounds.

In describing the operation, Dr. Duncan supposes the case to be one of laceration of the perineum, the fissure extending through the sphincter ani. The patient is placed and held in the position for lithotomy, and the surgeon is placed as he is during that operation. With his fingers or with forceps he seizes the fourchette, or that part which corresponds to it, transfixes it with the bistoury, and then continues to cut, first on the one side and then on the other, upwards from the fourchette or its representative as far as he deems necessary. In cases of procidentia, it is usual to make the saw advance as far forward as to be nearly on a level with the orifice of the urethra. The operator thus removes a long tape-like piece of integument, which is about half an inch broad, rather less than more; and he leaves a horseshoe-shaped wound in which the point of the shoe is at the fourchette. It is important that the proper piece of integument should be removed, and it is at some parts a matter of care to secure this. At the fourchette there is little difficulty. It is quite easily made out, or may be made to project by separating the labia. Further forwards on the sides of the vaginal orifice, the junction of skin and mucous membrane is sought for as the line of the wound, and it is not always quite easily found. The anterior margin of the wound is at or involves the posterior extremity of each nymphæ, and the line of the wound runs between this and the fourchette, its course being sometimes marked by the opening of the duct of the vulvo-vaginal gland on either side.

Generally two, sometimes four, arteries require ligature. Two of these are in front of the sphincter, one on either side: the other two are generally further forwards near the nymphæ. A few minutes' delay is now caused by waiting for the complete or nearly complete stoppage of oozing from the raw surface. Then the wound is closed.

A series of silver-wire sutures is passed about one-third of an inch apart. The wire sutures, after being placed, are observed to pass through the wound near its deeper margin, and emerge on the skin or rectal mucous membrane about a third of an inch distant from the outer margin of the wound. Beginning posteriorly, each suture is tied with some firmness, the edges of mucous membrane and of skin being carefully adjusted to one another. Now the bladder is evacuated, the vulva is washed and dressed with some wet lint, and the operation is finished.

The alvine evacuations are stopped for about ten days by daily use of opium in some form. Dr. Duncan uses solid opium in one-grain pill at bedtime, or oftener if there appears need for it. The patient is fed on light food and sparingly. The urine may be drawn off twice or thrice daily, or the patient may herself make it while lying. The wound requires to be kept clean by daily

dressing. Care should be taken that discharge does not accumulate in the vagina.

On the seventh or eighth day after the operation the stitches are removed. Twenty-four or forty-eight hours afterwards the bowels, if they do not spontaneously move, are acted on by castor oil.

The removal of the stitches is done as in the operation for vesico-vaginal fistula. A dissecting forceps is made to seize the projecting end of the ligature, and to tighten the loop by traction; then one blade of a sharp-pointed scissors is insinuated within the loop, and the scissors is made to cut it; after which it comes away by the traction of the forceps. But in a case of extensive perineal laceration it is sometimes difficult to get at the deepest or furthest back sutures. They may be half an inch or more within the margin of the new anus, and require considerable care in dealing with them.

ART. 198.—*Case of Varicose Aneurism.*

By WILLIAM STOKES, M.D.

(*Dublin Quarterly Journal of Medical Science*, August.)

Dr. Stokes, at a recent meeting of the Dublin Pathological Society, exhibited a remarkable specimen of this disease, in which an aneurism of the aorta, originating in one of the sinuses of Valsalva, opened into the right ventricle immediately below the valves of the pulmonary artery. The patient was a man, aged thirty-one, of intemperate habits. He suffered from anasarca, and severe dyspnoea, and oppression in the region of the heart. The liver extended below the ribs nearly down to the crest of the ilium. The area of cardiac dulness was much increased, and the impulse correspondingly diffused. There were three distinct murmurs—two at the base, a loud, harsh murmur of exodus, and a faint, badly-marked regurgitant murmur. Tracing down towards the apex, this murmur became more distinct—of a blowing character, and systolic in time. No visible pulsation of the arteries; collapsing pulse not well marked. *Frémissement* could be distinctly felt over the base of the heart, following the cardiac impulse. At the seat of this *frémissement* the patient was sensible of a peculiar sound, which he compared to that of “a woman churning.” At the post-mortem the heart was found enlarged; right cavities distended with blood; left ventricle much hypertrophied. Mitral orifice and the two curtains of the mitral valve were normal. This is a remarkable fact, and would serve to indicate that where a well-marked basic murmur exists along with a murmur at the apex, the existence of the latter does not necessarily establish the fact that the mitral valve is diseased. It is not by any means improbable that in many of these cases the murmur heard at the apex of the heart is merely the basic murmur, conducted by the body of the ventricle itself. The aorta was greatly dilated and its coats diseased. From its anterior wall, close to the semilunar valves, sprang an aneurism nearly the size of a tennis-ball. It may be said to have arisen from one of the sinuses of Valsalva. In its posterior wall was a rounded opening, through which a goose-quill could be passed. This aperture established a communication between the aneurismal sac and the right side of the heart, for the opening conducted into the *conus arteriosus* of the right ventricle, immediately below one of the semilunar valves of the pulmonary artery. The sac, which did not contain coagula, lay within the pericardium. A short time before death there was extreme lividity of countenance. Dr. Stokes observes that the direction taken by the aneurismal tumor downwards towards the heart confirms an observation made in 1836, by Professor R. W. Smith. He observed that in cases of aneurism, arising from the aorta within the pericardium or close to the sigmoid valves, the tumor has a tendency to pass downwards and encroach upon the cavities of the heart. He assigns as a reason, that the opening of the artery into the sac is placed within the influence of the retrograde flow of blood, the weight and impulse of which must tend to direct the tumor downwards. This is the second case observed by the author in which an aneurism springing from the aorta, close to its origin, has simulated permanent patency of the aortic valves.

ART. 199.—*On the Treatment of Gonorrhœa.**(Annales de Dermatologie et de Syphiligraphie, No. 6, 1871.)*

"Numerous methods have been recommended for the treatment of this affection—too numerous, one might say, for this fact proves that an antidote and an easy and sure remedy is yet to be discovered. Will this *rara avis* of anti-gonorrhœal medication ever be found? We fancy not—at least in the sense that some theorists seem to think. The reason of this is easy to give. Gonorrhœa, to a greater extent than any other affection, presents itself under such a multiplicity of aspects that it is by carefully treating it by means varied and graduated according to individual indications that one can hope to attain in a durable manner the wished for result.

But though experience has revealed no fresh remedy in addition to the efficacious agents which have been known for a long time in the treatment of the urethral discharge, practitioners have still endeavored to render those which science possesses more energetic in their mode of action and to employ them with less disagreeable results.

M. Demarquay has recently tried with much success the ethereal extract of cubebs, the efficacy of which had been previously vaunted by Dr. Constantin Paul. M. Demarquay states that he has always found this agent constant in its effects. He recommends its administration at the end of the acute period of the affection, in doses of from four to eight capsules daily; these represent from thirty to sixty grammes of cubebs.

According to M. Demarquay, this preparation of cubebs presents the following advantages:—

1. The gonorrhœa is cured rapidly without injection or any additional medication.
2. It causes no gastric irritation.
3. It produces no intestinal derangement.
4. Considerable doses can be given in a small volume, and the remedy does not excite the least repugnance in patients.

Many attempts have been made to palliate the disagreeable taste of copaiba, an agent so valuable in the treatment of gonorrhœa. With this object in view, the addition of sugar has been recently recommended by M. Roussin.

The following is the formula of this surgeon, which, in addition to sugar, contains large quantities of aromatic agents:—

Balsam of copaiba	30 grammes.
Powdered sugar	15 "
Powdered gum	5 "
Orange-flower water	50 "
Distilled water	50 "
Tincture of vanilla	30 drops.

Dr. Caster recommends as an important adjuvant in the treatment of acute urethritis injections of fresh water, with the aim of preventing the sojourn of pus in the canal. The patient is recommended to inject as often as he is able; the mean number of injections, according to the author, should be about thirty in the day.

ART. 200.—*Treatment of Gonorrhœa by Warm Water Injections.*

By JOHN O'REILLY, M.D.

(The Medical Record, September 1.)

Dr. John O'Reilly, in recommending warm water injections in the treatment of gonorrhœa, says that the subjoined conclusions may be drawn from his experience: 1. That gonorrhœa yields to local treatment, and even water injections. 2. That water injections or medicated lotions owe their efficiency to their frequent application. 3. That the common small syringe should be done

away with in treating this disease, and none used but those throwing a continuous stream. 4. That large injections, by fully distending the mucous membrane of the urethra, insure a speedier cure than those less copious.

ART. 201.—*Gonorrhœa Treated without Injections.*

By A. GIVEN, M.D.

(*The Medical Record*, September 1.)

Dr. A. Given, of Louisville, Kentucky (*American Practitioner*), for the past twelve years has treated successfully gonorrhœa in all its stages without injection, as follows: The majority of his cases recovered in from two to eight days, without any of the unpleasant symptoms which so often occur when injections are used. After a full dose of sulphate of magnesia, the patient is directed to take the following: Balsam copaib., sweet spts. nitre, paregoric, ʒʒ one oz.; Norwood's tr. of veratrum, one dr. M. A teaspoonful every four or five hours until the acute symptoms abate, when a dose every eight hours for a few days is nearly always sufficient to effect a cure. Locally the patient applies cloths wet with cold alum-water constantly to the penis until pain and heat subside. He has found the foregoing treatment well adapted to both the acute and chronic stage, but most useful in the earlier periods of the affection.

ART. 202.—*Amputation of the Penis by the Galvano-Cautic.*

By Dr. ZIELEWICZ.

(*Langenbeck's Archiv*, Bd. 12, 1870; *Gazette Hebdomadaire*, No. 34, 1871.)

This article deals with a class of cases in which the application of the galvano-caustic has long been indicated as a means of avoiding pyæmia and hemorrhage. In the cases reported by the author pyæmia was observed, but not traumatic fever. This may probably be explained by the nature of the galvano-caustic action, which has for its result simple linear mortification.

The author, in considering fully amputation of the penis and the diseases for which this operation is practised, has based his studies upon the reports of fifty cases of amputation of the penis by the cutting galvano-caustic loop. He has formulated the following conclusions:—

The affections necessitating the operation were in the majority of cases carcinomatous; in one case there was a large papillary tumor, and in another gangrene of the organ. Out of the fifty cases operated upon there were *eight in which death resulted from pyæmia*. This complication has its origin in the vascularity of the cellular tissue of the penis, in the veins of the neck of the bladder and the prostate, and also in conditions of hospitalism. All the cases of pyæmia occurred in hospital practice. In no case did hemorrhage occur. After amputation by the galvano-caustic there was no traumatic fever. Secondary contraction of the meatus occurred as after ordinary amputation. The ages of the patients recorded in forty-five cases were as follows: One patient was under twenty years; six between twenty and thirty years; fifteen between forty and fifty years; fifteen between fifty and sixty years; seven between sixty and seventy years, and three between seventy and eighty years.

ART. 203.—*A New Stricture-Dilator*.¹

By BERKELEY HILL, F.R.C.S.

(*British Medical Journal*, August 26.)

The instrument was described as operating on the principle of Perrève's, Holt's, and Richardson's. The two halves of a split sound, equal when in jux-

¹ Read at the 39th Annual Meeting of the British Medical Association.

taposition to the calibre of a No. 2 or No. 3 catheter, could be separated by thrusting between them a segment of a cone fixed to a slender stem, until they occupied a space equal to a No. 12 catheter. The dilatation might be carried on to No. 14 or No. 16 of Weiss's scale. The advantages said to be possessed by the instrument were—simplicity and cheapness of construction, absence of necessity for a central guide, and diminution of resistance.

ART. 204.—On the Extraction from the Bladder of Fragments of Calculus fixed in the Eyes of the Evacuating Catheter.¹

By M. RELIQUET.

(*Gazette Médicale de Paris*, No. 37, 1871.)

"To bring away at once all the small fragments of stone which result from a sitting of lithotripsy is one of the constant preoccupations of surgeons engaged in this operation. Hence the many means and instruments that have been proposed.

"I have the honor to submit a proceeding which, up to the present time, has always succeeded. When fragments of the calculus too large to pass away through the catheter have passed into its eyes and become fixed there, I place at the extremity of the catheter the canula of a syringe filled with water, and then, as I forcibly inject the fluid towards the bladder, withdraw the catheter along the urethra.

"At the commencement of the injection, when the catheter is in the bladder, the injected water strikes against the fragments which are fixed in the neck of the instrument and in the eyes. This water passing forcibly through the eyes around the fragments, envelops them, and whilst the catheter is being withdrawn separates from them the walls of the urethra.

"I have practised this method of extraction three or four times in the same sitting, when the repeated removal of a catheter, the eyes of which were filled with fixed fragments, was not followed by increased irritation of the urethra."

ART. 205.—The Treatment of Stone in the Female Bladder.²

By CHRISTOPHER HEATH, F.R.C.S.

(*British Medical Journal*, August 26.)

The paper was illustrated by three cases which had occurred in the author's practice. The first case was in a patient aged thirty-two, who was subjected to lithotripsy, a stone weighing four drachms, composed of phosphates, with a nucleus of oxalate of lime, being removed in five sittings with complete success. The second case was in a married woman aged forty-nine, in whom a large stone was readily felt per vaginam. Vaginal lithotomy was performed, and a stone of an ounce and a half and measuring two inches by an inch and a half was readily removed, the wound being closed immediately with six silver sutures passed through the entire thickness of both vaginal and vesical wall. The patient made a rapid and complete recovery without the formation of any fistulous opening. The third case was that of a child, aged eleven, in whom the urethra was rapidly dilated and a small stone extracted, when there was found to be a much larger mass fixed to the bladder, which was removed with difficulty after being partly broken up, the whole mass weighing nine drachms. The child had incontinence for a few weeks after the operation, but eventually recovered complete control over the bladder. Mr. Heath briefly contrasted the three proceedings, maintaining that rapid dilatation of the urethra within certain limits was a perfectly harmless and most useful practice. He ad-

¹ Communicated to the Académie de Médecine.

² Abstract of a Paper read at the 39th Annual Meeting of the British Medical Association.

vocated lithotripsy for moderate-sized stones in the adult, but for large stones preferred vaginal lithotomy with immediate closure of the wound—a proceeding which experience had proved to be remarkably successful.

ART. 206.—*On the Extension of Inflammation from the Epididymis to the Urethra.*¹

By FURNEAUX JORDAN, F.R.C.S.

(*The British Medical Journal*, August 24.)

Mr. Jordan remarked that inflammation of the prostatic urethra from any cause (injuries, foreign bodies, operations, adjacent inflammations, and all urinary obstructions) may extend to the epididymis. It would be an original investigation to discover any kind of prostatic inflammation that did not extend along the submucous connective tissue of the vas deferens. He was not aware that any one had observed the converse of this. He had recently watched a case in which inflammation unmistakably travelled from the epididymis to the urethra. A married man, free from disease and the history of disease, was admitted into the Queen's Hospital suffering from the effects of a severe blow on the scrotum. On the subsidence of scrotal swelling, the left epididymis was found to be enlarged, painful, and tender. The next day the adjacent portion of vas deferens was swollen to the size of a goose's quill, and tender to near the inguinal ring. The following day the swelling extended into a ring. A few days later a slight urethral discharge appeared, and all the symptoms of a mild urethritis. Mr. Jordan believed any new fact to be of value which would help to explain obscure urethral discharges.

ART. 207.—*Report of a Case of Wound of the Intestine in Ovariectomy.*

By CHRISTOPHER HEATH, F.R.C.S.

(*British Medical Journal*, November 18.)

At a meeting of the Clinical Society of London, on November 10th, Mr. Heath read a paper on a case of wound of the intestine made during ovariectomy, with recovery. The patient was under his care in the Hospital for Women in November, 1870, suffering from an ovarian tumor, which had been repeatedly tapped, and for the removal of which an attempted ovariectomy had been undertaken by another surgeon a year before. The patient was worn out with pain and sickness, and was anxious that another attempt at ovariectomy should be made. This was undertaken by Mr. Heath on November 25th, 1870, when very extensive adhesions to the surrounding tissues were found. On enlarging the abdominal incision with scissors in the ordinary way, an empty coil of small intestine, which was closely adherent to the wall, was divided in three-quarters of its circumference. The removal of the cyst was accomplished with considerable difficulty, the pedicle being tied and dropped. Mr. Heath then attached the bowel to the skin with silk sutures, forming an artificial anus, and closed the abdominal incision with wire sutures. The patient made a perfectly good recovery, feces and flatus passing by the artificial opening on the second day, and solid motions per anum. The silk sutures were removed on the eleventh day, and the patient was moving about at the end of a month. Three applications of the actual cautery were made to the edges of the fistula to contract it, but it did not close, and the patient left the hospital in April, 1871. She was presented to the Society in a very comfortable and healthy condition, the use of a belt and air-pad satisfactorily retaining all fecal matter, and the patient having regular stools.

¹ Read at the 39th Annual Meeting of the British Medical Association.

(C) CONCERNING THE UPPER EXTREMITY.

ART. 208.—*On the Treatment of Ganglion.*¹

By THEODORE BILLROTH, M.D., Professor of Surgery in Vienna.

The following passage on the treatment of ganglion illustrates the manner in which Professor Billroth alludes to methods of treatment, and records his own experience:—

"In the *treatment* we must, above all, bear in mind that we should avoid any operation that might induce suppurative inflammation of the sheath of the tendon, and might disable for a long time, or possibly cause a stiff hand in a patient who had been but little inconvenienced by his ganglion. Remedies such as mercury and iodine, which so stimulate reabsorption in cases of acute or sub-acute inflammation, are of little use here. The simplest and the most frequent operation is *rupture of the ganglion*. If, as is customary, the ganglion be on the dorsal surface of the hand, we take the flexed hand of the patient before us, place the two thumbs close together on the ganglion, and make strong pressure; this sometimes ruptures the sac, and the fluid is effused into the subcutaneous tissue, and then readily reabsorbed. When this method succeeds readily there is not much objection to it, except that it does not always cause a radical cure. The small, subcutaneous opening of the sac soon closes, the fluid collects again, and the disease continues as before. If we cannot rupture the sac with the thumbs, it has been recommended to do so with a quick blow by a broad hammer; although this succeeds now and then, I would not recommend it to you, for if unskillfully done it may cause a severe contusion, whose consequences we cannot always master. When the sac is too thick to rupture with the finger, I employ *subcutaneous discision*; I pass a narrow, short, curve-pointed knife (Dieffenbach's tenotome) horizontally into the sac, and with the point of the knife make numerous incisions on the inner wall of the sac; I then draw the knife slowly out, meantime pressing the fluid out of the sac. I then at once apply a compress, envelop the hand and forearm in a wet bandage, to prevent any extensive motion, and have the forearm carried in a sling four or five days. Then the bandage is removed, the small opening is healed, and the ganglion does not usually return, as it is apt to do after simple evacuation. The entire hernial sac has often been entirely removed, sometimes successfully, without subsequent inflammation, but at other times with suppuration of the sheath or loss of motion of the finger, so that I do not recommend this proceeding to you.

"The treatment of extensive dropsies of the sheaths of tendons in the palm of the hand and forearm is much more difficult, since, for various reasons, subcutaneous discision is not available here, and resorbents are of little use; the only thing left is to try other methods, which often at least induce some suppuration. Take into consideration, then, whether it be really necessary to do anything severe. If the disturbance be not so decided as to greatly interfere with the patient's business, you had better leave things alone. But if something must be done, your choice is almost limited to two methods—viz., an extensive incision, and puncture, with subsequent injection of iodine. When you make the puncture, which I prefer to incision, you should choose a trocar of medium size, as the fibrinous bodies will not escape through a very fine one. You will often have trouble in evacuating them even through a large canula; then you will facilitate the operation by injecting tepid water through the canula from time to time, so that the increased amount of fluid will aid the escape of the slippery fibrin-kernels.

"As already mentioned, the quantity evacuated is often large. I once took one and a half tumblerfuls from a tendon sac. After all has been removed, fill a syringe with an ounce of a mixture of equal parts of water and tincture of

¹ *Surgical Pathology and Therapeutics*, Translated by C. E. Hackley, A.M., M.D., Surgeon to the New York Eye and Ear Infirmary. New York, 1871. Pp. 676.

iodine, or a corresponding quantity of solution of iodine and iodide of potassium, and inject it slowly. Let it remain in the sac one or two minutes, and then escape slowly. Now remove the canula, cover the wound with a small compress, bind up the hand and forearm carefully, and put it on a splint. The patient should stay in bed several days. The operation is followed by a considerable swelling, due to collection of fluid as a result of acute inflammation of the serous sac. If the tension become decided, we should remove the dressings, carefully close the puncture with plaster, then paint the swelling with strong tincture of iodine. In the more favorable cases the swelling will then gradually subside, become less painful, and in the course of two or three weeks disappear entirely. In many other cases, however, there will be some, even if very temporary, suppuration, which may be checked and subdued with ice. In the worst cases there may be extensive suppuration of the sheath, with necrosis of the tendon and its results. Of course, opening the whole sac naturally induces suppuration. On this occasion I must again repeat that there may be hernial protrusions from the capsule of the joint, just as from the sheaths of the tendons, which may become dropsical without the dropsy extending to the entire synovial membrane. The fibres of the capsule separate, and the synovial membrane passes between them into the subcutaneous tissue in form of the finger of a glove. Although such formations of wound, pedunculated, long, wreath-like, and other shapes, may develop from any joint, they are chiefly met in the knee, hand, and elbow; in the latter I have often seen these isolated dropsies of hernias of the synovial sac communicating with the joint; they are accompanied by slight stiffness of the joint.

"I urgently warn you against operation on these ganglia of the joints; this operation may be followed by suppuration of the joint."

ART. 209.—*The Treatment of Ganglion in the London Hospitals.*

(*British Medical Journal*, July 1, 8, and 15.)

The treatment of the common affection called ganglion, simple as it may appear and is generally supposed to be, is still a subject on which a very considerable difference of opinion exists amongst surgeons, as may be seen by a perusal of the following notes.

King's College Hospital.—Mr. John Wood passes a spear-pointed needle, cutting on both edges, and mounted on a handle, into the cyst, and made to transfix it again and again, so as to let out the synovial contents into the areolar tissue of the surrounding fascia. The needle is then made to scarify briskly the interior of the cyst, and is used pretty freely in dividing the cyst-wall at its opening of communication with the sheath of the tendon. Pressure is then made with both thumbs upon the tumor, so as to squeeze out completely its contents, partly into the subcutaneous areolar tissue, and partly out through the opening in the skin by which the needle entered. Iodine paint is then applied thickly over the surface, and upon it a thick pad of lint, over which firm pressure is made by a bandage. This is kept on for several days, after which the iodine paint is again applied, and the pressure readjusted. After a few applications in this way, the tumor seldom reappears; and, if it do so, a repetition of the process rarely fails to succeed. No case has been met with, out of many hundreds treated, in which suppuration or any bad results have followed this plan; but several cases in which a seton had been employed have given rise to much trouble and danger from erysipelatous inflammation and abscesses, followed by stiffening, and in some cases permanent impairment of the use of the limb.

Mr. Henry Smith, having tried various means of cure, has come to the conclusion that the most effectual is that of operation by the seton. He passes a single ligature-thread through the cyst, and allows it to remain according to circumstances. In some instances severe inflammation and even suppuration will be produced in forty-eight hours, and then the thread is to be withdrawn. In the majority of instances, however, especially when the patients are careful not to use their hand, the seton may be retained for a period varying from three

days to a week or more without producing any inconvenient symptoms ; but so soon as suppuration takes place, Mr. Smith withdraws the thread, and the cure is almost invariable. It is necessary to bear in mind in this treatment that, in some constitutions and under certain conditions, the presence of the seton may produce very severe consequences ; in fact, this is the only objection to the treatment. With care, this rarely occurs ; and there has only been one instance amongst Mr. Smith's patients at the hospital where bad results did happen. This was in the case of an unhealthy man who applied with a ganglion as large as a crown-piece, on the back of the wrist. Mr. Smith passed a seton. The patient did not apply until after four days, and in the meantime most violent inflammation and suppuration occurred. Free incisions were necessary, and the wrist-joint itself was threatened for a time ; but the use of a splint and careful treatment prevented any mischief. The patient, however, was compelled to remain under treatment for several weeks.

University College Hospital.—Sir Henry Thompson applies, for ordinary and recently formed ganglia about the wrist, tincture of iodine for four or six weeks, usually with good effect. If they resist this, he passes carefully through the centre, with a sharp needle, a double thread of silk, ties the two ends in a knot, squeezes out the contents by the needle-opening, and leaves the thread in for three days, applying water-dressing. At the end of that time, if a purulent discharge be seen, and a little inflammation have taken place, Sir Henry removes the thread, and applies water-dressing. Almost always, there is no more trouble with the ganglion. If little or no action be produced by means of the tiny seton, he leaves it in a day or two longer. Sir Henry has never had occasion to regret this but once. An out-patient at the hospital, who did not attend at the end of three days, returned a week after the operation with erysipelatous inflammation of the arm. She did badly, and got some permanent stiffness of the hand in consequence. That is the only unfortunate event among a great many cases which Sir Henry has thus treated ; and, had he seen her at the end of the three days, he has no doubt all would have gone well.

Mr. Christopher Heath endeavors to burst the cyst by pressure, and failing this, punctures it with a grooved needle, and applies iodine paint for a few days.

St. Bartholomew's Hospital.—Mr. Savory treats those sacs filled with glairy fluid, which are so apt to form about the wrists and hands, by puncture, complete evacuation of contents, and firm, equable, and continued pressure, as described by him in the second volume of *St. Bartholomew's Hospital Reports*, p. 79. Mr. Savory treats ordinary cases of enlarged bursa over the patella and these ganglia in the same way.

Mr. Thomas Smith believes the best way to cure ganglion to be to rupture the cyst by forcible compression, if possible (not by a sudden blow), and to keep a pad and bandage applied for some days afterwards. Even where the ganglion does not suddenly collapse, the effect of a hard squeeze may be to cause gradual absorption. When the synovial cyst is too tough to be affected by the previous plan, he is in the habit of making a subcutaneous section of the entire cyst-wall with a fine tenotomy knife, and keeping up pressure for some days. If, from any objection on the part of the patient, or from other causes, this cannot be done, he has occasionally cured the disease by blistering with ointment of biniodide of mercury. He has no experience of injecting, excising, or passing setons through ganglia.

Guy's Hospital.—Mr. Poland adopts every possible variety of measure, with success and non-success. Puncturing and emptying out the contents, with subsequent pressure, has had very satisfactory results, but not always so ; and when failure has resulted he has laid open the ganglion, with a cure resulting.

Mr. Howse finds a certain number of cases which are not curable by any of the above methods—where the cyst-wall is thick and not capable of being ruptured, or where it is situated under dense fascia, as in the palm of the hand. Such tumors are often complicated by the presence of a large number of "millet-seed bodies." These are, he thinks, best and most expeditiously treated by excision of the cyst in the antiseptic mode. The usual objection to this plan of treatment is the fear of diffuse inflammation supervening. The antiseptic method, however, entirely obviates this objection, and with its aid he has

no fear of opening the sheaths of the tendons even extensively. In this operation. Mr. Howse has found it no objection that the whole of the cyst-wall cannot at all times be removed. In spite of its presence, the wound will generally close by adhesion, and not a drop of pus be found. Even in puncturing a ganglion he would generally adopt the antiseptic method, considering it safer so to do. In most cases Mr. Howse prefers excision of the cyst to injection with iodine or any other irritant, having once or twice seen a good deal of inflammation set up by its means. For the same reason, treatment by setons is, he believes, not a very safe mode of procedure.

Mr. Davies-Colley's usual practice has been to disperse ganglia by pressure; and, if they are too hard to be treated in this way, to blister them.

St. Thomas's Hospital.—Mr. Le Gros Clark treats ganglion when in the wrist by puncture subcutaneously with a narrow lancet, or broad, spear-shaped needle, and scratches the interior of the sac. He then presses out the contents beneath the skin, and subsequently applies a lead compress for a few days. This rarely fails, is almost painless, and is, in his experience, unattended with risk. When on the hamstring muscles, over the great trochanter, &c., he finds repeated blistering the safest and most efficacious treatment, or a blister kept open with iodine ointment. Opening these large ganglia is not unattended with risk. It is safer, if opening be intended, to blister first. On the front of the wrist, and extending into the palm, blistering may be tried. Mr. Clark has not often been successful when they are large in this position. If opened, it should be by a free incision in this position. He prefers this to seton. Mr. Clark has never injected a ganglion, nor has he found it necessary to dissect one out.

Middlesex Hospital.—Mr. Campbell De Morgan prefers to leave slight cases of ganglion alone. If troublesome on the back of the wrist, he fairly cuts through them subcutaneously, and keeps on pressure. The large ones on the palm of the hand, if he interferes at all, Mr. De Morgan lays open fully, saving the annular ligament, and dresses with some balsamic tincture. Enlargements of the bursa patellæ he treats with rest and iodine. If they be inflamed and suppurating, he lays them open. When they are indolent, he uses puncture and rest; sometimes setons, though Mr. De Morgan states that he has seen mischief from these. He has seen great good from blistering. Ganglia in the popliteal space he never touches, if he can help it. If it be necessary to interfere, the greatest care should be taken to preserve rest. Inflammation is often propagated to the joint from them.

Before using subcutaneous puncture, Mr. Nunn advises diligent trial of alternate douches of very hot and cold water. This will remove almost with certainty any tenderness along the course of the tendons, and diminish the ganglion, if it will not get rid of it. Mr. Nunn has never met with results at all satisfactory from the employment of blister, or of localized pressure by pad and strap.

The mode of treatment which Mr. George Lawson adopts for the small ganglia on the extensor tendons of the wrist is, first, to try if he can rupture them by firm pressure with his two thumbs whilst the hand is laid upon the table; and then, by steady rotary rubbing, to cause the contents of the cyst to be extravasated in the adjacent cellular tissue. He then paints the part with a strong solution of iodine, and applies a firm pad and a bandage. When, however, the ganglion resists the pressure of the thumbs, and cannot in this way be ruptured, Mr. Lawson introduces a tenotomy-knife through the skin, at a short distance from the ganglion, and lays it freely open subcutaneously, and then, by pressure with the fingers, evacuates its contents into the surrounding tissues. The parts are then painted with iodine, and a pad and bandage applied as above stated. Mr. Lawson strongly deprecates the plan of using setons for the cure of ganglia, as on two occasions he has seen the hand nearly lost from diffuse cellulitis which followed this mode of treatment.

St. George's Hospital.—Mr. Henry Lee's plan of treating ganglia is to puncture them subcutaneously, and to press out their contents into the subcutaneous cellular tissue every day or two until it ceases to reaccumulate. Mr. Lee

lately treated in this way, with success, a ganglion as large as a French walnut, on the instep, of many years' duration.

Mr. Rouse bursts the cyst, when recent, with his thumbs, and well rubs the surfaces together; and in many instances this succeeds. When ganglia are of long standing, he punctures them, squeezes out their contents, then rubs the surfaces, and subsequently blisters or uses liniment of iodine. If this fail, he again punctures, blisters, and dresses the sore with blue ointment. This last generally succeeds, especially if the sac be thick. In those rare cases in which melon-seed bodies exist, which are usually found on the anterior surface of the wrist, Mr. Rouse believes that no treatment save laying open the sac and dressing it in is of any avail. He has had no experience in dissecting out the sac, or laying it open and dressing in with lint, in the ordinary forms of ganglion.

London Hospital.—Mr. Walter Rivington invariably punctures the swelling with a fine-pointed bistoury, squeezes out the fluid thoroughly, and then applies a compress tightly for a few days. Failure to cure is in his experience rare.

St. Mary's Hospital.—Mr. Gascoyen advocates a subcutaneous method of treatment, and adopts the old plan of rupturing these swellings by pressure with the thumbs or by a smart blow, afterwards applying a conical pad with a bandage. This treatment he has generally found to effect a cure in recent cases. In those of old standing, when the above means fail to disperse the tumor, he recommends free incision with a tenotomy-knife, introduced in a valvular manner through the skin; and the application of firm pressure in the same manner after evacuating the contents. When these tumors have existed for a long time, they have, however, a great tendency to re-form after any plan of treatment. Blisters, iodine, and other stimulant or absorbent applications have seldom proved of service; they merely diminish for a time the size of the swelling. The very severe inflammation which often follows the use of setons in these cases, renders their employment undesirable. Mr. Gascoyen deprecates excision of these swellings, except in those few instances where the tumor, having become solid, is disposed to ulcerate from friction or some other cause. In these cases, though, the connection between the ganglion and the sheath of the tendon has become severed, so long as the contents remain fluid, showing that there is a communication with the interior of the sheath, he is strongly opposed to any attempt to remove them.

Charing Cross Hospital.—The treatment of ganglion which Mr. Hancock has found most successful, and which he now always adopts, is subcutaneous section, making, as far as possible, a crucial incision; and afterwards, gradual compression, with rest of the part.

Mr. Bellamy has found a good smart squeeze with the thumbs sufficient to disperse the contents of the sac into the surrounding tissues. This, however, appears to be effective only in ganglia having very thin walls, and situated either above or beyond that point where the annular ligament is thickest, or exists merely as fascia. In ganglia that have existed for some time, where the walls are thick and the cyst frequently multilocular, a puncture should be made, but in a peculiar way. A sharp-pointed tenotomy-knife should be introduced flatwise through the skin, and caused to traverse the cyst or cysts, making a free opening in them. Pressure with the thumbs will then readily diffuse the contents, and a pad and bandage will frequently effect a cure. In other cases, where the thick annular ligament of the wrist is lifted up by a sub-jacent cyst, Mr. Bellamy prefers free incision, pushing the knife straight into the sac through the annular ligament and integument, dividing these structures thoroughly; the contents are then evacuated externally, and a strong pad or compress is kept on for some time. It is remarkable how rarely even the slightest inflammation supervenes, and how thoroughly the ganglion is destroyed without further applications. He has cured large obstinate ganglia by passing setons through them, but this was after the ordinary methods of treatment had failed.

Westminster Hospital.—Mr. Holthouse's most frequent method of proceeding in simple ganglia about the wrist is, first to flex the joint to the utmost,

and make firm pressure on the tumor with the thumbs. Failing to get rid of it by this means, he passes a single thread through it; again makes pressure as before, and so empties it through the apertures made by the thread. The two ends of the thread are then tied together, and a compress applied. In the course of one, two, three, or more days, according to the amount of inflammation set up, the thread is removed; the inflammation subsides, and the ganglion is cured. Mr. Holthouse never adopts this plan of treatment unless he can see the patient within twenty-four hours, lest inflammation of an unhealthy character, or too violent, should be set up. Failing this condition, he punctures the tumor with a tenotomy-knife; squeezes out the contents; applies a firm compress over it, and straps it tightly round a splint placed on the palmar aspect of the wrist. There is a variety of ganglion with the pathology of which Mr. Holthouse is not well acquainted. It appears suddenly, without obvious cause, and cannot be distinguished either by its appearance or feel from an ordinary ganglion. It differs from this, however, not only in the mode of its appearance, but in its not forming a perfectly closed sac. Under pressure it may be made to disappear completely, and without rupture of its walls; for this reason Mr. Holthouse always first tries pressure and manipulation of the tumor before resorting to seton or puncture.

After a considerable experience of the various methods of treating ganglion, Mr. Francis Mason believes that in those cases in which the cyst has a thin wall, the forcible rupture with the thumb or a flat book is the simplest and best plan of effecting a cure; but in cases of long standing, or those in which the sac is very thick, by far the least painful and most successful proceeding is to puncture the cyst in a valvular manner with a grooved needle (a harelip-pin does equally well); and, having traversed the contents, to make five, six, or more punctures in various parts of the cyst, especially on the opposite side, taking care not to wound the skin in this situation. On the needle being withdrawn, pressure with the thumb evacuates the contents of the sac into the surrounding tissues; absorption ultimately ensues, and if the precaution be taken to place a pad of lint, secured with a bandage, over the part, the cyst seldom, if ever, refills. With regard to the common and popular method of suddenly rupturing ganglions with a book, Mr. Mason has remarked that, when the ganglion is tough, no little skill is required to strike the part so as effectually to accomplish the object in view; and another point of some importance is that, if the cyst be not broken at the first attempt, the patient is unwilling to have the blow repeated, much discomfort being occasioned by this somewhat apparently coarse procedure. Again, a book of suitable size and shape is not always at hand. Moreover, the proceeding is in many instances, even if successful, attended with considerable pain, generally causing extreme pallor, and not unfrequently inducing a fit of fainting. Few patients object to the prick of the needle, provided they have the assurance that there is no "cutting operation." Iodine paint at the onset may be tried, but permanent good seldom follows from its use. The removal of the cyst by excision is seldom absolutely necessary; and when the operation is performed, it is, as Mr. Mason has seen, sometimes followed by intense inflammation of the sheaths of the tendons, accompanied with profuse suppuration, and leaving the use of the fingers much impaired, not to mention the constitutional irritation set up, endangering the life of the patient. Such cases are of course rare; but the practice of puncturing the cyst in the way already described is, so to speak, painless, and is almost entirely free from risk in any shape.

Mr. Richard Davy pursues the following methods amongst the out-patients—viz., excision, partial or complete; subcutaneous slicing; subcutaneous puncture, and injection of tincture of iodine; mechanical crushing, and subcutaneous puncture. The seton, being a tedious and painful process, has not been employed.

Great Northern Hospital.—Mr. Gay has tried a variety of ways, with different success in different cases. His experience has led him to the conviction that these bursæ must be treated with caution, and that danger may accrue, at least to the limb, if such a rule be not observed in every case. Rupturing the cyst by violence, with subsequent pressure, is of little or no avail. The cyst

has, in his experience, repaired the injury and become refilled. External puncture, and even free incision, followed by compression, have been more successful. A series of blisters, followed by some irritant application, such as tincture of iodine, has occasionally succeeded, especially if the cyst be subsequently punctured externally, the contents squeezed out, and compression be ultimately applied. In these cases the blistering must be continued, so as to insure the propagation of the excited inflammatory action to the inner lining of the cyst. Mr. Gay has not tried iodine and other injections. He has removed these cysts on two occasions, and with results that determined him not to attempt this mode of treating them again. In the first instance the operation was followed by a violent attack of diffuse subcutaneous cellulitis and acute inflammation of the wrist-joint, which proved serious, although ultimately the limb and joint were saved; and in the second case the healing of the wound was very prolonged, and was attended with deep-seated suppuration and some permanent contraction of the extensor tendon. The plan which Mr. Gay usually follows (and uniformly with success) is that by seton. He passes a single thread of silk through the cyst, and allows it to remain until undoubted pus issues from the punctures. He employs a needle so large as to permit of the contents of the cyst being expressed through the openings which it makes; and in case the thread does not excite sufficient inflammatory action, he not only moves it daily, but soaks the thread with tincture of iodine, and draws the portion thus soaked within the cyst. Even this plan is sometimes followed by severe inflammation and suppurative action, when the thread has had to be taken out. Occasionally it has been so severe that he has had to open the cyst as an abscess. For the most part, however, the process is simple; no superfluous action is set up. About the seventh day some pus exudes with the thread; the thread is then withdrawn; gentle pressure is applied, and the cyst contracts and disappears, all but its walls. Even when treated thus, the case must be under daily observation.

Mr. W. Adams thinks that, in the simplest form of ganglion, such as that frequently seen over the carpus, when recent, rupture of the sac by a sudden blow, or by hard pressure with the thumb, should first be tried, and will frequently succeed, even if it have to be repeated once or twice. This failing, he always resorts to a free subcutaneous section of the sac in different directions by introducing a tenotomy-knife; and, after transfixing the sac, cutting freely in one direction, and then turning the knife, cutting as freely in the opposite direction. If the thin ganglionic sac appear to yield before the knife, the latter may be partially withdrawn, and the point made to pierce the sac in two or three situations. Firm pressure must afterwards be made by means of a piece of metal or small coin, wrapped round with lint, and kept in position by a bandage for a week. By this means he has generally succeeded in obliterating ganglia by one operation. Occasionally, however, failure occurs, and either the same operation may be repeated, or a seton may be introduced. In employing the seton, Mr. Adams always introduces six threads, and removes three on the following morning. This at once allows the fluid to escape, and relieves the inflammatory tension and pain produced by the seton. The remaining three threads may be allowed to remain for a week or more. From a neglect of this rule of removing half the seton, he once saw acute suppurative inflammation extend to the wrist-joint in a man under the care of the late Mr. Mackmurdo, at St. Thomas's Hospital, and the patient died. The preparation, showing complete destruction of the articular cartilages of the carpal bones, is in the museum of St. Thomas's Hospital. Mr. Adams believes the seton to be a perfectly safe and reliable remedy, if half the silk be removed on the day following its introduction; but it may occasionally fail, and in two instances he has cured an obstinate ganglion by a second introduction of the seton. To what extent ganglion may be dissected out with safety he cannot say, but in one instance, mistaking the character of the tumor, Mr. Adams dissected out a large ganglion of a flattened and lobulated shape, which had formed over the extensor tendons as they cross the ankle-joint. He mistook it for a fatty tumor, such as he has seen in the forearm. On section, the ganglion was seen to be thick-walled and loculated, and, from its flattened and expanded form, he does not think a seton

could have been employed. Metal sutures were used, and Dr. Richardson's colloid styptic, with cotton-wool, applied. Union by the first intention took place. Old thick-walled bursal tumors over the patella, we know, have frequently been removed with safety.

Mr. Buxton Shillitoe always treats simple ganglion by subcutaneous puncture with a grooved needle, thoroughly emptying the cyst, and irritating its interior by a few scratches with the point of the needle. He is particular in keeping pressure upon the emptied cyst until he can apply a firm pad, which is retained in place by plaster and bandage for a week or so. It very seldom fails to cure if thoroughly done. If it does, he repeats it immediately the cyst commences to refill. After the bandages are removed he orders the application of iodine or frequent douches of cold water. Mr. Shillitoe has seen awkward results from the use of setons, and he believes, in the treatment of simple ganglions, that they are unnecessary. Compound ganglion requires much more careful treatment, partly on account of its extent and position, partly because its contents are mixed up with more or less solid fibrinous deposits. They occur chiefly in the palm of the hand and side of the sole of the foot. He has cured those on the palm of the hand by dissecting out a portion of the cyst, without division of the annular ligament, squeezing out the remainder of the semi-solid contents, and allowing the wound slowly to granulate up. Mr. Shillitoe says he should not hesitate to inject iodine in such cases.

ART. 210.—On Injuries of the Axillary Artery occurring in Artillery Practice.¹

By WM. R. E. SMART, M.D., C.B., Inspector-General Royal Navy.

(*British Medical Journal*, August 26.)

Dr. Smart cited three cases of injury of the axillary artery resulting in gangrene, caused by violent throwing back of the upper extremity when explosions take place in the act of loading cannon. He considered that this peculiar injury occurred when the explosive force had not been of the highest degree, as he had never known an injury to occur at the shoulder where the hand had been blown away. These cases showed that the proper treatment at the seat of vascular injury was, by cold or other means, to insure early coagulation and fibrination of the clot, which happened successfully in two of the cases cited, and not to delay amputation at the middle of the upper arm as soon as gangrene had begun at the fingers.

ART. 211.—Axillary Aneurism; Ligation of the Left Subclavian Artery; Recovery.

By C. C. F. GAY, M.D., Surgeon to the Buffalo General Hospital.

(*American Journal of the Medical Sciences*, October.)

The following case is of professional interest from the fact that several surgeons of distinction failed to make a correct diagnosis:—

"G. S., aged twenty-six, was wounded six years previously to his entrance into hospital by the accidental discharge of a pistol, the ball entering the front of the left shoulder. Soon thereafter a small tumor was observable in the axilla. The ball could not be extracted.

"At the time he entered the hospital for treatment, the tumor had increased in size until it became as large as a child's head, and was located just in front of the axilla, upon the walls of the chest. It presented the appearance of a large abscess, pointing and about to burst. It felt soft, and fluctuated only at the apex; the remainder of the tumor was hard and unyielding; it could not be compressed.

¹ Read at the 39th Annual Meeting of the British Medical Association.

"The most thorough and prolonged stethoscopic examination did not reveal pulsation or thrill. There was no pulsation in the radial artery at the wrist; the arm was partially paralyzed. I introduced the exploring needle through the soft portion of the tumor and obtained a few drops of blood; I afterwards thrust the needle down into the interior of the tumor, whence no fluid escaped. Then an ordinary trocar was used and carried into the centre of the tumor. A little blood at first escaped, but there was no continued flow, or rather the blood ceased to flow entirely; therefore the canula was withdrawn. Chloroform was now administered, when I made an incision over the tumor through the integuments, and coming down upon a blue surface, I forbore longer to use the blade of the knife. With the handle I made slight pressure over the point entered by the trocar, when the sac burst and the blood spurted with great force and volume. Whether I did rightly or wrongly, I immediately tore open the sac in the line of my incision, turned out the clot, and thrust my hand up into the axilla, and arrested the hemorrhage at once.

"Stimulants were now administered, the subclavian compressed, and the position taken with my hand was assigned to two assistants. I at once cut down and ligated the left subclavian artery. The two wounds were dressed and the patient put to bed.

"On the seventh day secondary hemorrhage supervened, but was speedily arrested by the house physician, after which there was a steady and good convalescence; the patient was well in six weeks after the operation; and the paralysis of the arm and forearm gives promise of disappearing, but the pulse at the wrist is still absent."

ART. 212.—*New Incision for Ligature of the Subclavian Artery.*

By Assistant-Surgeon F. P. STAPLES.

(*Medical Times and Gazette*, July 22.)

Mr. Staples gives a method which he has practised for some time, and by which he hopes that the difficulty of ligaturing the subclavian artery in the third stage can be overcome.

His process is as follows: "The patient being placed in the usual position with his head back and to the opposite side, with his shoulder depressed slightly, but not violently, let the point of the knife be entered at the posterior edge of the sterno-mastoid muscle, one inch and a quarter above the superior margin of the clavicle, and let an incision be carried from that point, in a straight line, to within a quarter of an inch of the attachment of the trapezius to that bone, dividing skin and platysma. This incision should be a little short of three inches. The operator should then lay aside his knife, ligature the external jugular vein in two places, and divide it in the direction of the original incision. The deep cervical fascia should now be divided, and the edges of the wound gently separated, when the posterior belly of the omo-hyoid muscle will be exposed for its entire length. The edges of the wound should now be retracted, and the superior retractor should carry with it the omo-hyoidens; and when this has been done, the white cords of the plexus, with the artery inferior and internal to them, will be observed to occupy the bottom of the wound. The knife should now be laid aside, unless it is necessary to dissect a lymphatic gland out of the way, and the vessel separated from the lowest cord of the plexus with a director, and ligatured in the usual manner. Tying the external jugular vein is not insisted upon, provided it can be easily drawn aside, but generally a ligature would expedite matters, and any branches of this vein which cross the line of incision should, if divided, be treated in the same manner.

"What are the advantages claimed for the operation recommended? Why have the stereotyped guides to the artery—viz., edge of anterior scalenus, and tubercle on first rib—not been mentioned? What special advantages has the operation described over that commonly practised—i. e., by incision along or near the upper margin of the clavicle?

"The advantages claimed for the operation are: 1. That the incision is

parallel to the normal course of the artery. 2. That the true guide to the vessel—posterior belly of omo-hyoid—is exposed by incision recommended for its entire length. 3. That the edges of incision admit of easy retraction, and, in this way, of easy access to the vessel. 4. That the risk of venous hemorrhage obscuring the final steps of the operation is lessened.

“My answer to the second question I have asked is very simple. To feel the edge of the scalenus anticus in a bleeding wound is next to, if not quite, an impossibility, and it does not follow that the tubercle on the first rib is always so well developed as to permit of recognition by the sense of touch; and independently of both these surgical sign-posts, it has always appeared to me that a far more reliable guide is to be found in the omo-hyoideus.

“Regarding the third question—What special advantages are claimed for this operation over that commonly practised?—it may be stated, I think, that, if an incision is made in a line with the clavicle, it is obvious that, when carried deeper, it will not meet with the omo-hyoideus or true guide unless at its outer angle; whereas the incision recommended is parallel to that muscle throughout its entire length. Secondly, in the wound resulting from the ordinarily used incision, retraction can only be made in an upward direction, as the clavicle prevents retraction downwards; whereas, with the incision now recommended, retraction can be made in both directions. Thirdly, in the incision recommended there is no risk of dividing the transverse cervical vessels; whereas, when the incision along the clavicle is used, they are often cut, and, when it so happens, very troublesome bleeding obscures the further steps of the operation.

ART. 213.—On a Case of Suppurating Tumors of the Lymphatics of the Upper Extremity.

By M. L. E. DUPLAY.

(*Annales de Dermatologie et de Syphiligraphie*, No. 6, 1871.)

The following interesting case was under the care of M. Bazin at the Hôpital St. Louis:—

Decaux Henri, aged sixty-three years, and a man of strong constitution, was admitted on April 4, 1870. He stated that he had always been in good health, and that he had never had any serious malady or any venereal affection. About two years previously he had noticed, between the first and second metacarpal bones of the right hand, a small, hard, and rounded tumor, which increased in size slowly and finally ulcerated. This affection was treated by caustic paste, which resulted in cicatrization of the ulcer; and nothing remained save a slight permanent redness in the hand. At the end of a month, however, the red patch became tuberculated, and of a violent color. At the time of his admission there was a violet-colored circumscribed patch occupying the first inter-metacarpal space, which presented all the signs of fairly-marked papillary hypertrophy.

In spite of this, the patient was able to follow his occupation of a carpenter without experiencing any pain or the least fatigue. At the end of three months there formed, a short distance from the patch already described, a small, perfectly round, red, and painful swelling. Eight days afterwards a second small tumor presented itself at a distance of three fingers' breadth above the first, at the radial border of the forearm. The process was not arrested here: a series of tumors identical with the first were developed on the forearm and arm from below upwards, and successively, at intervals varying between four and eight days. At the time of his admission under M. Bazin, the man presented the following condition:—

Along the radial border of the forearm, and commencing over the lower extremity of the radius, was a series of small tumors or nodosities, which superiorly was directed inwards across the front of the forearm to the inner border. These tumors were regularly dispersed, with intervals of about seven or eight centimetres. The skin over each interval was perfectly healthy. The supra-epitrochæan and the axillary glands were not swollen. These tumors were distinctly rounded, fluctuating, and of a dark red color. In other respects

they varied according to their situation. The superior nodosities having been last formed had attained a less degree of development. Whilst the inferior swellings were more superficial, decidedly fluctuating, and manifestly inflamed, the superior swellings were more deeply seated, and the skin covering them was perfectly sound. The highest tumor could be made to roll under the skin.

In presence of this singular affection, M. Bazin suspended for a time a positive diagnosis, giving it forth, however, as his idea that the case was one of phlegmonous traumatic hydros-adenitis consecutive to lymphangitis. He ordered the application of poultices, the use of starch baths, and the administration of laxatives.

On April 15th the lowest swelling became redder and inflamed, and opened spontaneously, giving exit to a white and serous discharge resembling chyle. Subsequently two other nodosities opened spontaneously, and three others were incised with a lancet. From all there was a discharge of pale serous fluid. The incision of the swellings was followed by inflammation of the lymphatics of the arm and forearm. After the disappearance of this affection indurated lymphatics could be felt in connection with the nodosities. In presence of these facts—namely, the milky aspect of the discharge from the nodosities, the development of angeioleucitis after their incision, and the consecutive induration of the lymphatics—M. Bazin did not hesitate to diagnose the case as one of lymphatic abscesses, formed, in all probability, at the situation of the valves. The swellings which had been opened showed very little tendency to cicatrize, the edges of the ulcers became indurated, and surrounded a small, fistulous opening, from which there flowed a considerable quantity of grayish serosity. Some milky discharge, removed from a large swelling by means of an aspirator, was found, under the microscope, to consist of proteinic and fatty granular bodies, collected in a mass, or floating freely; these bodies resembled those met with in a fibrinous clot which has softened at its centre. In the centre of this mass of granular bodies could be seen rounded and slightly granular cells, containing a single nucleus. These altogether resembled white blood corpuscles.

In the month of June the patient was discharged from the hospital at his own request. Several of the ulcers had cicatrized, but the majority still persisted and presented fistulous orifices, from which there was a constant discharge of serous fluid.

M. Duplay makes the following observations on this case :—

"The affection which we are now discussing consisted in a series of small suppurating tumors, arranged in a row along the course of the lymphatics of the superior limb, and developed successively from below upwards. The progress was essentially chronic: it commenced about three months before the man's admission into the hospital, and the six weeks of his stay in the hospital permitted us to observe but a part of the evolutions of the disease, as he left before perfect recovery. Finally, the process, under the influence of an apparently insignificant cause, was complicated by angeioleucitis, to which succeeded chronic inflammation, with consecutive induration of the lymphatics.

"M. Bazin diagnosed lymphatic abscesses, formed in all probability at the seat of the valves. Indeed, everything leads me to think that there was no question here of a phlegmonous hydros-adenitis, or of any kind of suppuration having its seat in the peri-lymphatic cellular tissue. The essentially chronic course of the affection, the character of the discharge, the mode of development, and the situation of the tumors, the ready reaction on the part of the whole brachial lymphatic system against the incisions made into the swellings, and, above all, the secondary induration of the lymphatics, all constitute so many presumptions in favor of the diagnosis laid down by M. Bazin.

"But can one proceed further and find out the starting-point, the exact seat, of the suppuration? In other terms, can one give a pathogenic explanation of the affection, the various phases of which have just been described? At present this seems to be impossible. M. Renaut, on examining the discharge, was struck by its analogy with granular detritus produced by the degeneration of fibrinous clots: he asks whether at the seat of each valve there had not been formed a lymphatic coagulum, the granulo-fatty degeneration of which had given rise to each of the suppurating tumors. This ingenious explanation gives a

complete account of the facts, but, besides being open to certain objections, and among others, the slowness of lymph to coagulate, it requires, before we can admit it without reserve, at least an anatomical confirmation."

ART. 214.—*Treatment of Fracture of the Clavicle.*

By LEWIS A. SAYRE, M.D., of New York.

(*American Practitioner*, August.)

Dr. Lewis A. Sayre, of New York, has finally reduced the treatment of this fracture to *two strips of adhesive plaster, without any axillary pad*; and as such he now gives it to the profession as the simplest and most efficacious plan yet devised.

His method of keeping the inner portion of the clavicle from riding over the outer portion is by *putting the clavicular portion of the pectoralis major muscle on the stretch*, and compelling it to *pull* the clavicle in place, and thus overcome the tendency of the clavicular portion of the sterno-cleido-mastoid to elevate it, which it will always do unless this precaution is taken. After drawing the arm backward and retaining it there by a strip of adhesive plaster, pass another piece of plaster from the *well shoulder* across the back, and by pressing the elbow well forward and inward, the first plaster round the middle of the arm is made to act as a *fulcrum*, and the shoulder is necessarily carried *upward, outward, and backward*, and the plaster being carried over the elbow and forearm (which is flexed across the chest) to the opposite shoulder, the place of starting, and then secured by pins or stitches, permanently retains the parts in position.

Dr. Sayre formerly commenced the first plaster on the inner side of the biceps; but he found that that muscle would roll around and the plaster would lose its hold, requiring to be renewed occasionally; and if it completely encircled the arm for the purpose of a stronger attachment, it would arrest the circulation, and thus prove dangerous. He uses strong and good adhesive plaster (Maw's moleskin is the best) cut into two strips, three to four inches wide (narrower for children). By this plan of treatment the patient is only detained from his daily avocation a sufficient length of time to properly adjust the strips of adhesive plaster.

In one instance, a prominent lawyer of New York City slipped upon the ice and fractured his clavicle, on the way down town. He was brought to his office. Dr. Sayre dressed him in the manner described at 9 A.M., and before 11 he was pleading his case in the open court. A blacksmith was brought to his office with a fracture of the left clavicle. He dressed it, and in less than an hour the patient was again working at the forge with his other arm, and continued his labor without any interruption. In both cases the union was perfect and without any deformity. In closing, Dr. Sayre could multiply these cases by many similar ones, and he therefore feels quite confident that if any surgeon will follow the plan suggested, he will have equally good results.

ART. 215.—*Case of Excision of the Scapula.*

By CHARLES STEELE, F.R.C.S.

(*Medical Press and Circular*, August 30.)

At the thirty-ninth annual meeting of the British Medical Association, Mr. Charles Steele related a case of excision of the scapula.

Charles Bees, aged eight, was admitted on April 14th into the Bristol Royal Infirmary, on account of a large swelling upon the right scapula, which had been forming only six weeks, and had enlarged very rapidly during the last fortnight. The tumor covered the whole surface of the scapula except the inferior angle, and encroached over the upper border towards the clavicle; it was firmly adherent to the scapula, most prominent over the spine, and had a highly elastic

and, in parts, fluctuating feeling. The child had fallen off in flesh slightly, and looked rather delicate. Mr. Steele made an exploratory incision, and removed a minute portion of the substance, which, on microscopic examination, showed large, almost square, cells filled with secondary cells. Extirpation of the scapula was decided upon; and on the 18th, after making a free incision down to the bone, through the tumor, to confirm diagnosis, Mr. Steele made a free elliptical incision from the upper border to the inferior angle, carefully surrounding the first incision, so as to avoid infiltration. He then slipped the inferior angle of the scapula from under the latissimus dorsi, divided the muscles attached to the posterior and anterior borders, freed the subscapularis muscle from its surroundings, divided all connections of the clavicle and humerus close to those bones, and, by very delicate dissection, cleared the projections of the tumor from their close proximity to the subclavian vessels, &c. The suprascapular, posterior scapular, and subscapular arteries, and one muscular branch, were secured. The forearm was supported across the chest, and a compress of wood applied over the excavated cavity. The tumor had evidently sprung from the bone; it covered its dorsum, infiltrated its tissue, formed a large firm protection on the venter, and had stretched the supra-spinatus, infra-spinatus, and subscapularis muscles as a capsule inclosing it. Recovery steadily progressed till the seventh week; the wound was then nearly healed, the child ate well, had gained in flesh, and was able to be up all day and go into the garden, and looked well. Two nodules of encephaloid now recurred, and were removed entire, the intercostal muscles being cleaned in doing so. Ten days afterwards, a fresh nodule formed near the spine; and the granulating surface of the wound became so infiltrated that all hope of further removal had to be abandoned. It was some satisfaction to notice that all recurrence of disease was in the lower part, and towards the spine. Mr. Steele remarked that this case showed clearly two points: first, that the operation was well borne by the system, and recovered from; and secondly, that, even before cicatrization was complete, a surprising amount of movement existed in the arm. The hand and forearm could be freely used, and the arm drawn well forwards, also extended from the side, and even drawn backwards by the latissimus dorsi muscle. This showed that, had disease not returned, a very useful limb would have resulted.

(D) CONCERNING THE LOWER EXTREMITY.

ART. 216.—*On Hypo-venosity of the Lower Limb.*

By JOHN GAY, F.R.C.S.

(*British Medical Journal*, October 28.)

At a meeting of the Medical Society of London, on October 16th, Mr. Gay read a paper on this subject. The term was used to express a condition in which there is a deficiency in the veins of the saphenous system, as hypo-venosity might be used to express an excess in the development of these veins. In the latter, especially with varicosity, the limb was usually lean, and the outlines of bone, muscle, and tendon, were, as a rule, sharp and well defined. In hypo-venosity, these outlines became gradually effaced, the skin became dusky, the whole limb dense or brawny, and muscular action difficult and painful. With the exception of perhaps a few dilated or varicose venous twigs below the ankles, or on the dorsum of the foot, there was scarcely a vein to be seen. As the disease advanced, the sub-dermoid fat layer became denser and lost its elasticity. Its remote causes were disease of the vessels, such as phlebitis, insufficient muscular exercise, systemic asthenia, &c. Degeneration and consequent incompetence of the saphenous veins and their branches was its direct or exciting cause. Secondly, it was presumed, the deep trunk veins become dilated, their valves partially inert, and fatty deposit and degeneration took place in the muscles and their connective tissue. The grounds for this inference were: (a) that functional deterioration of the saphenous system, through

thickening, atrophy, rétrécissement, or thrombus, was an occasional pathological fact; (b) and that saphenous inefficiency, as shown by a varicose condition of the venous radicles, as well as by a dusky color of the skin, otherwise than from melasma or scleroderma, was habitually associated with and indicated dilatation of the deep trunk veins. The author remarked that the venous system was double—*superficial* and *deep*, or *main* and *complementary*; the former playing to the latter the part of a waste-pipe, or compensating system, ready to relieve it when its vessels were unduly filled. The deep veins constituted the *real* venous system; therefore, the current through these veins, in the healthy performance of the double circulation, was maintained by a combination of forces of which voluntary muscular was not a necessary coefficient. The current through the complementary veins, on the other hand, received, in the limbs more especially, its principal impulse from voluntary muscular action. If its vessels became inefficient, the surplus quantity of blood due to muscular exercise was poured into the deep veins with a force that resulted in dilatation, valvular incapacity, muscular deterioration, and other changes. The forces which determined the returning current of the blood were complex: the principal of them were the heart's action, arterial elasticity, and the influence of the nervous system. Of these, each might separately be cut off, and yet the blood would find its way back to the heart. Moreover, the blood passed from the arteries into the veins without the aid of any of these forces. Mr. Gay believed that there was a sort of molecular force which existed in connection with muscular tissue or sarcode, and that to it the venous current was mainly due; that in fact, as an agent in the circulating system, it was to the capillary very analogous in some respects to what the heart was to the arterial system. As the deep or main system of veins was associated with the nutritive processes, so the superficial or complementary was essentially eliminatory. From these veins in the lower limb, dropsical effusion took place; and it was not improbable that in other dropsies, as of the pericardium, pleura, or peritoneum, the fluid escaped from veins of the complementary system. The treatment was the reverse of that ordinarily employed—viz., an entire freedom of the limb from all compresses, enforced walking exercise, begun in moderation and periodically increased, hot applications, especially hot sea-water, to the limb, and perhaps the internal administration of liquor potassæ; in short, the use of all those measures, hygienic and therapeutic, which could, on the one hand, restore the circulation of the limb, and, on the other, relieve it of its superabundant fat.

ART. 217.—*Dr. L. A. Sayre's Method of Treating Hip-Joint Disease.*
(*Medical Times and Gazette*, July 29.)

The following account is given by the reporter of cases:—

We have quite recently had the opportunity of meeting Dr. Sayre, during his short visit to this country, at two of our London hospitals, and at one of them—the Middlesex Hospital—we had the satisfaction of hearing him explain his views and illustrate his treatment of cases of hip-joint disease. Dr. Sayre's hip-extension splint has for some years been known in England; but from ignorance, or want of sufficient attention to, many little details in the mode of application, it has not met with the success in the hands of others that Dr. Sayre has established for it in his own. Whatever may be the views entertained by different surgeons as to the etiology or pathology of hip-joint disease, none who have had experience of such cases can have failed to see the ill-effects produced upon the general system by the long-continued inactivity which the treatment ordinarily employed necessitates, and to desire some means by which extension and proper rest to the affected joint could be supplied without confinement to the bed and house.

By long experience, obtained at the Bellevue Hospital, New York, and in practice, and by a thorough knowledge of and attention to the pathology and anatomy of the joint, Dr. Sayre has employed and perfected a splint by which surgeons can obtain these desirable results. He regards the majority of cases

of hip-joint disease as the result, not of a strumous or tubercular dyscrasia, but of some local cause—a blow, or twist, or sprain, which, though very slight, may set up an inflammation of the synovial membrane of the joint, or cause a “blood-blister” between the end of the bone and its investing interarticular cartilage. This not being observed at the time of its occurrence, is not quieted or subdued by immediate rest, but goes on developing slowly into a grave disease. With these views strongly impressed upon him, he was convinced of the propriety of overcoming the affection by purely local means, instead of relying upon medicinal remedies to correct a supposed scrofulous condition or hereditary defect of the body.

The familiar and characteristic position of the limb in the second stage of the disease—viz., one of flexion upon the body, abduction and rotation outwards—Dr. Sayre explains by the action of the ilio-femoral or accessory ligament, which, passing over the front of the capsule from the inferior iliac spinous process to the anterior intertrochanteric line of the femur, is intimately blended with it, and keeps it close to the neck of the bone. When the quantity of fluid normally contained in the capsule is increased by inflammation of and effusion into the joint, the capacity of the capsule itself must be increased, and this can only be done by the unfolding of the capsule; hence, the limb is flexed, adducted, and rotated outwards, to take off the pressure or tension of the accessory ligament, and thereby to permit the more complete relaxation of the capsule. That this is the result of an increase of the quantity of fluid in the capsule, Dr. Sayre has proved by injecting quicksilver into a joint after death and after the cessation of rigor mortis.

But another result of the joint-mischief is an atrophy of the muscles about the joint, accompanied by their contraction. Two conditions of contraction of muscles are recognized—one in which the muscular structure is not incapable of being stretched and extended by force, and the other in which, as after very long-continued want of use, the fibres become irretrievably altered and shortened. The former condition Dr. Sayre calls the “contracted,” the other the “contractured” state, and it is this latter which requires in some cases to be overcome by subcutaneous section of the “contractured” muscle before the limb can be brought into its proper position.

Now, in hip-joint disease the abductor muscles, which become tensely contracted, would draw the limb inwards and abduct it, did not the distension of the capsule above described prevent this; hence, one of the sources of the acute pain suffered in the second state of the disease is the conflict between the muscles tending to abduct the thigh and the resistance produced by the effusion into the joint, which keeps the limb adducted. Another cause of pain is the pressure upon the diseased surface due to the contraction of the muscles around the joint.

When the capsule ruptures, and the pus escapes into the surrounding tissues, the third stage of the disease has arrived; the pain is often considerably diminished, and the position of the limb is changed. The limb is adducted and drawn inwards; the muscles, in fact, being no longer resisted by the fluid in a distended capsule, have it all their own way. If the opening in the capsule be small, then the change will occur slowly; if large, then rapidly; and this it is which gives rise to the apparent spontaneous luxation of the femur, the occurrence of which Dr. Sayre denies. This so-called luxation, he says, is brought about by an enlargement of the acetabulum, the end of the bone being still contained within its capsule, and not by a slipping of the end of the bone out of the capsule.

In the diagnosis of the early stage of the disease, Dr. Sayre places much stress upon the dropping of what he terms the string of the buttock—i. e., the gluteo-femoral fold—the flexed position of the knee and hip as the child stands bearing the whole of his weight upon the sound limb, and the want of the rectangular decussation of the two imaginary lines, one along the central line of the abdomen, and the other from the anterior superior spinous process on one side to that on the other. In hip-joint disease, even in the early stage, in order to get these lines to cross at right angles, the leg must be flexed. Another point of importance is ascertained by placing the child naked upon a hard bed,

floor, or table, when, if there be no disease, the spine will lie along the surface, the popliteal spaces will touch the bed or floor, and the lines will cross at right angles, as already mentioned; but if there be disease of one of the joints, the hand can be passed between the table and the lumbar spines, until the affected limb is flexed on the abdomen, when the arch in the spinal column disappears.

In the treatment of hip-joint cases everything depends upon the extension being kept up continuously and properly. The straightening is to be done by degrees; at first it should be employed in the line of deformity, and then gradually brought from this into a straight position. The mode of extension used is the weights and pulleys, until the straight position has been obtained, taking care that the point upon which traction is made is above the knee, so as not to strain the ligaments of that joint. Afterwards, the extension-splint is worn during the day, and the weights and pulleys are applied during the night.

This splint consists of two pieces of steel, the ends of which are made to slide one within the other by means of a key, thus forming an upright extending along the outside of the thigh from two inches above the condyles of the femur to the crest of the ilium, the length of which can be increased or diminished, as greater or less extension is required. It ends below in a little roller, and a buckle is attached to its outer side, by which the webbing keeping it in place is fixed. Two flattened arched pieces, at an interval of two inches, pass from the lower portion of the steel rod over the front of the thigh to another short straight piece along the inside of the thigh, which connects the two cross-pieces and is parallel with the outer and longer rod. A roller and buckle are fitted similarly to the lower end of this short inner steel rod, and the whole is fixed around the thigh by a strap which passes over the posterior half of the circumference from the outer to the inner straight rods. At the upper extremity a concave plate of steel, well padded and about three inches long and one broad, is attached by a ball and socket joint; this is adjusted to the pelvis immediately below the crest of the ilium. To each end of this plate the ends of a perineal pad are fastened by buckles, so that the counter-extension is made on the perineum, and the child supports its weight on this perineal pad (instead of on the hip-joint), from which it is transmitted by the steel upright to the condyles of the femur.

In applying the instrument, two strips of strong inelastic adhesive plaster—that spread on moleskin Dr. Sayre prefers—two or three inches wide, and long enough to extend from just above the ankle to three inches above the knee, are fixed to the leg without warming the plaster; and after removing all loose scarf-skin, by thoroughly washing and wiping the limb, some webbing should be sewed fast to the lower end of the plaster for the purpose of fixing the pulleys for night extension, and then the plaster is to be fixed with a roller carried from just above the ankle to above the knee. When the condyles are reached with the roller, the ends of the strips of plaster are to be turned down, and the roller applied back over the sticking surfaces. By these means the plaster is first secured by the roller, and then the roller is made firm by the plaster, so that the whole can be made to remain in place for three or four months. So much to provide for night extension. Next two fan-shaped pieces of plaster, with webbing (just wide enough to pass over the rollers and fit the buckles at the end of the uprights of the splint) attached to their narrow ends, are applied to the sides of the thighs, so that the broad extremities are towards the pelvis, and the pointed ends opposite the place upon which the lower part of the instrument is to be fixed. The plaster is then covered with a roller, and the upper ends of it, having been cut into strips, are turned back strip by strip over the bandage, and so made to hold the bandage in its place.

The instrument is then placed over the thigh, and the lower end fixed by being buckled to the webbing attached to the fan-shaped pieces of plaster, and by buckling the strap which passes behind the thigh; then the perineal pad is fastened to the plate below the crest of the ilium; and, lastly, extension is made by lengthening the steel uprights by means of the key. After the adjustment of the splint, the child may be allowed to stand and walk; but it will be often necessary that, at first, a thick-soled boot be worn on the sound side,

as, owing to the obliquity of the pelvis, the well leg will for a time be apparently shorter than the extended diseased one.

We had the satisfaction of seeing this treatment applied to a little boy who had all the symptoms of the second stage of the disease well marked, and in a few minutes after the adjustment of the splint the child was quite free from pain, and could walk and sit with no other inconvenience than was caused by the stiffness of the plaster on first being applied.

The advantages of this instrument are beyond all argument. By its aid, where properly adjusted, recovery can be made from this tedious and destructive disease without the deformity of an ankylosed joint, and without the constitution being undermined by long confinement.

Instruments the same in principle and to obtain the same results are made for the knee-joint and ankle-joints; and by means of some "wire breeches" Dr. Sayre is enabled to send patients who are submitted to excision of the joint, when this operation is required for the third stage of hip-joint disease, into the open air a day or two after they have undergone the operation.

ART. 218.—*On Subcutaneous Division of the Neck of the Femur.*

By WILLIAM ADAMS, F.R.C.S., Surgeon to the Orthopædic Hospital.

Mr. Adams, who claims to have made in December, 1869, the first operation on record for subcutaneous division of the neck of the femur for the relief of bony ankylosis, has recently published a paper on the selection of cases for this operation, and mentions the fact (and instances) of four operations of this character having been successfully performed since the above date. Referring to thirty-four specimens of ankylosis of the coxo-femoral articulation to be found in the London museums, he thinks that this operation would have been admissible in twenty-one of them. He says:—

"From the facts shown by the specimens above referred to, with regard to the neck of the thigh-bone, it becomes of the greatest practical importance to diagnosticate: 1. The class of cases of bony ankylosis of the hip-joint in which the neck of the thigh-bone remains of its normal length; 2. Those in which the neck of the bone is shortened, but remains of sufficient length to admit of the operation being performed; and 3. Those in which the neck has been so far destroyed as to prevent the operation being performed. There can be no doubt that, in a large proportion of cases, this diagnosis can be made with absolute certainty, and must be based upon the nature of the disease, or morbid conditions producing the ankylosis, viz., whether rheumatic, pyæmic, or traumatic inflammation; or whether it is the result of strumous disease of the joint. Now with reference to these points, the following are the conclusions at which I have arrived:—

"1. In rheumatic ankylosis, no destruction of bone ever exists, and the head and neck of the thigh-bone, therefore, always remain of their natural size.

"2. In ankylosis after pyæmic inflammation, more especially in its subacute form, from which the patient frequently recovers, destruction of bone rarely if ever exists, the soft structure only being destroyed.

"3. In ankylosis after traumatic inflammation in healthy adults, such as that which occurs after wounds of the joints, and gunshot wounds in the neighborhood of the joints, when the joint itself has escaped injury; and in some cases of ankylosis, chiefly from long-retained position, as a general rule, no destruction of bone occurs, even after acute suppurative inflammation, the soft tissues only being involved.

"4. In ankylosis after strumous disease of the joint, when arrested in the early stage, without the occurrence of suppuration, or, at least, of abscess bursting externally, there is generally only a superficial caries of the head of the bone; and the destruction being thus limited in extent, the neck of the thigh-bone remains of its natural length, although practically somewhat shortened by being depressed, or sunk into the acetabulum. In this class of cases, however, the operation can generally be performed.

"5. In ankylosis following the more severe forms of strumous disease, in which there has been evidence of caries or necrosis of bone, with abscess bursting externally, and remaining open a considerable time, generally giving exit to small particles of bone, destruction of the head and neck of the thigh-bone to a greater or less extent may be diagnosticated, and in all such cases the operation cannot be performed.

"Thus it will be seen that out of the five classes of bony ankylosis above described, in three classes the head and neck of the thigh-bone remain of their full natural proportions. In the fourth class, although some difficulty may occasionally be met with, the operation can generally be performed; and it is only in the fifth class of cases that the operation is decidedly negatived."

ART. 219.—*A Case of Popliteal Aneurism.*¹

By M. DUPLAY.

(*Gazette Hebdomadaire*, Nos. 17, 18, 1871.)

The subject of this report was a man aged about forty-nine years. He had had syphilis, and was a spirit-drinker. About seven or eight years before his admission he had suffered from an attack of hæmoptysis, followed by a cough, but these symptoms soon passed off. He could not account in any way for the affection for which he came under the care of M. Duplay. For six years previously there had been occasional pain and stiffness in the right popliteal region during movements of the limb, and at times he noticed swelling of the leg. About three years before admission a tumor appeared in the ham, which remained free from pain for two years.

On admission there was found in the right popliteal region a tumor of the size of the fist, which was prolonged upwards as far as the ring in the adductor magnus. This was aneurism. The pulse could not be felt in the posterior tibial. The first plan of treatment was forcible flexion; this was badly supported at first, but in the course of a short time the man was able to tolerate it for about twenty minutes. Three or four sittings were practised for a period of twelve days. Forcible flexion was afterwards combined with digital compression at the groin; three hours of digital compression daily, and three sittings of forcible flexion. At the end of the eighth day of this treatment there was no alteration in the condition of the tumor. Digital compression was then kept up from eight in the morning until six in the evening, but as the groin became painful it was necessary to discontinue this treatment. It did not result in any amelioration. A cushion was then placed in the popliteal flexion, and direct compression combined with forcible flexion applied for fourteen hours. The walls of the aneurismal tumor were then found to be somewhat hardened. On June 7th, 1870, digital compression was applied from eight in the morning until ten at night; this proceeding caused much pain. The tumor was then manifestly hard and the pulsation not so strong; the bruit still persisted. Direct compression was then applied again, but with no result, and finally digital compression at the groin for thirteen hours. There was no longer any improvement, and the tumor commenced to increase in size. The patient was wearied by the long duration of the treatment.

On August 2d the femoral artery was tied in the region of Scarpa's triangle. The tumor then became hard, and diminished in size. In the course of a few days, M. Duplay endeavored to find out whether a clot had formed above the ligature; he then noticed that the arterial pulsations were continued up to this point. Shortly afterwards drops of blood were observed in the dressings. On pulling the ligature blood streamed away in a jet. Compression of the artery upon the pubis did not arrest the hemorrhage, and the blood streamed from the lower end of the tied artery. He did not place a ligature upon the external iliac, as this would not have prevented the hemorrhage from the lower opening.

¹ Communicated to the Société de Chirurgie, Paris.

A second ligature was placed on the femoral artery about two centimetres above the former one. Preparations were then being made to tie the artery below the inferior opening, when it was found that the hemorrhage from this point had ceased. M. Duplay thinks that his first deligation had included with the femoral artery an anastomotic branch, which conducted the blood from the superior to the inferior part of the vessel. Hemorrhage was arrested then without deligation of the inferior part of the artery. At first all went on well. The pulsations, however, continued up to the seat of the second ligature, and no clot was formed. Another attack of hemorrhage was feared, and, as compression at the groin could not be directly applied, the external iliac artery was tied on the 31st of August.

For some time after this operation pulsation ceased in the femoral artery. But on the following morning pulsation was again observed in the superior portion of the vessel. Heat had returned in the limb a few hours after the operation. The pulsations were feeble, and resembled those of the radial artery. Six days afterwards the ligature came away from the femoral without hemorrhage. On the eighteenth day the iliac ligature was detached.

The aneurismal tumor then diminished in size, and the patient progressed favorably up to the end of September, until fresh symptoms occurred, which had been favored by a long sojourn in the hospital, and by intense emotions. The abdominal wound suppurated freely, and became fetid. On October 18th the patient was removed to his home. In the course of the following eight days the wound closed. The tumor was reduced to the size of a pigeon's egg, and no pulsation could be felt along the course of the femoral artery. In February, 1871, the patient died from phthisis.

This case is an example of failure of forcible flexion and digital compression. Deligation of the femoral artery at the summit of Scarpa's triangle is a bad operation, because one is never sure of being at a sufficient distance from the origin of the profunda. When the hemorrhage was observed after this operation, the external iliac would have been tied if blood had not been seen to flow from the lower end of the femoral artery. After the ligature of the external iliac the circulation was re-established to the trunk of the femoral, and if a second ligature had not been placed on the latter vessel, there would have been hemorrhage both from the superior and inferior orifices. The rapid return of the circulation in the superior part of the femoral is explained by the dilatation of the collateral vessels and the formation of anastomoses due to previous digital compression.

ART. 220.—*Loose Cartilages of the Knee-Joint and their safe Removal by Subcutaneous Incision.*

By W. S. SQUARE, F.R.C.S.

(*British Medical Journal*, August 26.)

The author states that since he published his account of the operation by subcutaneous incision, about ten years ago, when he related nine cases, he has performed the operation fifteen times. The twenty-four cases had all been operated on without selection, and all had recovered without drawback. Cases were brought forward illustrative of the dangers incident to the operations by direct and valvular incision; and the operation practised by the author was described. The loose cartilage is conducted to the inner and lower part of the joint and held there by an assistant. A tenotomy-knife having been introduced, the capsule of the joint is freely incised upon the cartilage; the knife is then directed so as to open the cellular tissue over a convenient part of the fascia. The cartilage is now pressed and lifted out of the joint into the cellular bed prepared for it, and slid along for about three inches. It is fixed *in situ* with a firm pad and adhesive plaster, the foot and leg being bandaged up to the edge of the cartilage, and the limb placed in a splint. If no inflammation ensues, the cartilage is excised about a week after the operation. The paper closed with a few remarks on the different varieties of loose cartilage, their structure and origin.

ART. 221.—Incised Wound into Knee-Joint, with Transverse Section (Fracture) of Pat-lla; Primary Excision; Death.

Under the care of Mr. BARTLEET, at the General Hospital, Birmingham.

(*The Lancet*, August 26.)

The following case is interesting, not only as presenting an example of an unusual injury, but also as adducing additional evidence against primary excision of the knee.

J. B., aged thirty years, an agriculturist, while carrying two large mowing-scythes on his shoulder, put his left foot in a rabbit-hole, and fell forwards, so as to bring his right knee in contact with the edge of one of the scythes. He was brought to the hospital two hours afterwards, with the following injury: An irregular wound, about three inches in length, of semilunar shape, was situated near to, and in a line with, the outer edge of the patella, and was continued upwards and inwards over that bone for about an inch. The first part of the wound laid open the knee-joint for about two inches, exposing the outer condyle of the femur; and subjacent to the second half was a transverse division of the patella near its middle, the two halves being separated by an interval of about a quarter of an inch.

There was but little bleeding or shock at the time, and the patient seemed robust and vigorous. Mr. Bartleet excised the joint in the ordinary way, removing the broken pieces of patella along with a slice from the ends of the femur and tibia. After the operation, the limb was put up on the anterior splint now in ordinary use at the hospital for excision of the knee, which has been recently described. The wound was dressed antiseptically, according to the plan of Professor Lister, the lac plaster and protective oil-silk being employed in preference to his more recently invented applications. Every precaution was taken at this and the previous stages to insure a faithful adherence to the system of treatment; and indeed, in spite of the further unfavorable progress of the case, the condition of the wound at the time of death was such as to warrant the most favorable anticipation for the local condition, had the case terminated otherwise.

On the day following the operation considerable oozing of blood had taken place, owing mainly to the agonizing jactitation and spasm of the muscles, which were but partially relieved by a hypodermic injection of a third of a grain of morphia, followed by a scruple of chloral hydrate every four hours. The pulse was 126; the temperature 104.2° Fahr. On the third day so much blood had oozed out and stained the dressings that it was found requisite to change them. This was done with due precaution, and the appearance of the wound left nothing to be desired. Beef-tea, brandy, and champagne were freely given from the first; but in the evening the patient became delirious. His temperature reached 105° Fahr., and his pulse 140. He spent a restless night, was much exhausted in the morning, and died on the fourth day, apparently from shock.

The post-mortem appearances were negative, the viscera being all healthy. The ends of the bones were in good apposition, and covered with a thin layer of plastic material. The wound had united in parts.

It may be well to add that the patella was divided transversely about the middle, and that the divided surfaces were rough and irregular, as if its solution of continuity had been caused by fracture or disruption by muscular action, except on the anterior surface, where the bone was cleanly cut to the depth of about a quarter of an inch. In addition to this, the quadriceps extensor of the thigh had almost torn off a thin shell of the patella near its insertion; and here probably fracture of the patella would have occurred completely in the self-preservatory effort, had not its disruption at another part been determined by the contact and partial section of the bone by the edge of the scythe.

ART. 222.—*Notes of a Clinical Lecture on Fracture of the Patella.*

By JONATHAN HUTCHINSON, F.R.C.S., Surgeon to the London Hospital, the Blackfriars Hospital for Skin Diseases, and the Royal London Ophthalmic Hospital.

(*Medical Times and Gazette*, August 19.)

The principles of treatment laid down by Mr. Hutchinson are to prevent effusion if it has not occurred, to favor absorption of fluid which has been poured out, and to bring the fragments of the patella into close and permanent apposition.

The plan which Mr. Hutchinson invariably adopts is to put the limb on a straight back-splint, and by that means bring the lower fragment as high as possible, and by pieces of cross-strapping maintain it there; then to bring down the upper fragment by strapping and firm bandaging as near as may be to the lower fragment, and keep it there by readjusting the strapping as often as it gets at all loose. Many surgeons, after doing all this, proceed further to elevate the whole limb into the air, with the intention of shortening the distance between the origin and insertion of the rectus muscle. Mr. Hutchinson never adopts this practice, because he believes it to be quite useless, and very uncomfortable to the patient. The advocates of the elevation plan defend it by appealing to a constant state of partial contraction of the muscles, which is supposed to be mainly instrumental in causing the separation of the fragments; and they assert that by lessening the distance between the ends of the muscle they diminish the consequence of this contraction.

Mr. Hutchinson does not for a moment deny that the origin and insertion of the rectus femoris muscle are brought nearer together by elevating the thigh or by raising the body. He asserts, however, that the muscle when left to itself is not in a state of constant contraction; but, on the contrary, that it very soon relaxes completely, and that therefore any arrangement for shortening the distance between its attachments is uncalled for. It is not to contraction of the rectus, but to synovial effusion, that the separation of the fractured portions of bone is due, and it is therefore useless to make any special provision for insuring the relaxation of the muscle. Mr. Hutchinson is even of opinion that elevation of the limb may be injurious, for we place it in a constrained position, and he thinks that muscles when in positions of discomfort are more likely to take on irregular and violent action than when allowed to rest in their ordinary postures.

As to the mode of repair in transverse fracture of the patella, Mr. Hutchinson is inclined to think that bony union is not so rare as it is supposed to be. He has dissected one specimen of union by bone, and he has seen several cases in which he had not the slightest doubt that bony union had taken place.

PART III.—MIDWIFERY.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

ART. 223.—*The Determining Cause of Labor at Full Term.*

By A. F. A. KING, M.D.

(*American Journal of Obstetrics*, 1871.)

Dr. King, discussing the theories put forward to explain why labor occurs at full term, submits the following propositions. When pregnancy occurs, the uterus grows to keep pace with the growth of its contents, so that until the end of gestation there is a constant mutual adaptation between the capacity of the uterus and the bulk of its contents; but at full term a very opposite condition of things occurs: the womb, having reached the limit of its development, ceases to grow, while the fœtus not only continues to grow, but seems to increase even faster than at any preceding period. Hence the first determining cause of labor—the cause of “inherent,” “insensible,” peristaltic contractions—is distension of the uterus, this distension taking place as a necessary consequence of the womb having ceased to augment its capacity, whilst its contents continue to increase.

ART. 224.—*Will Quinine Originate Uterine Contractions?*

In answer to the query in the *American Practitioner*, “Will quinine originate contractions in the gravid uterus?” Dr. Lewis A. Sayre, of New York, publishes a case in the same journal, in which quinine was given to produce premature delivery on account of a deformed pelvis. Its administration was followed, in a very short time, by vigorous and continued contraction of that organ. This case was one of more than ordinary interest in its clinical history, as serious complications attended the first confinement, and this was the second time that labor had been successfully induced before the eighth month, and in both instances with a living child.

In this case it may be very properly questioned whether the quinine was the active agent in inducing contractions, or whether it was a mere coincident, as other means had already been employed to induce labor. But as the contractions did not occur until after its administration, Dr. Sayre thought it of sufficient importance to note the fact.

In the *Giornale Veneto of Medical Sciences*, Dr. Angelo Monteverdi states that he has found the Peruvian bark and its preparations to contain highly emmenagogue properties, superior to the ergot. The sulphate of quinine, in doses of five grains every half hour, administered to pregnant women, will produce—first, the simple tension of the fibres of the uterus; second, slight contractions; and lastly, strong and expulsive contractions, so as to cause miscarriage and premature birth. He has used the sulphate of quinine as above in cases of protracted labor without regular or long pains, and flaccidity of the uterus, where the ergot should have been used, even where rigidity of the os has existed, or where the placenta has not been successfully expelled, and he has found the first dose of quinine to revive the already inefficient pains and contractions, and successfully carry to an end, in less than an hour, the long-desired labor.

ART. 225.—*On the Utility of Ergot in Facilitating Labor.*

By S. MENDENHALL, M.D.

(*New York Medical Journal*, July.)

At the twentieth annual meeting of the Indiana State Medical Society, held at Indianapolis, Dr. S. Mendenhall read a paper on the "Utility of Ergot in Facilitating Labor." He claims that the prevailing idea, that ergot is prejudicial to both mother and child, is erroneous, and judiciously remarks that, when ergot is given at the proper time, and in proper conditions, it never causes any accidents. The proper way of administering it he believes to be in infusion in warm water, the quantity to be one drachm of the fresh pulverized ergot to four ounces of water, to be given in three or four doses, when the womb is soft and sufficiently dilated.

ART. 226.—*On the Intermittent Contractions of the Uterus during Pregnancy; their Physiological Value and Assistance in Diagnosis.*

By J. BRAXTON HICKS, M.D., F.R.S.

(*The Lancet*, October 28.)

At a meeting of the Obstetrical Society of London, on October 4th, the President, Dr. Hicks, read a paper on the "Intermittent Contractions of the Uterus during Pregnancy; their Physiological Value and Assistance in Diagnosis." He showed, as the result of eight years' constant observation, that the habit of the uterus was to contract at intervals of from five to twenty minutes, and then to relax. These contractions, he said, lasted about three or five minutes, although under circumstances of irritation they might continue longer, and even, in diseased states of the ovum, were almost continuous. Only one apparent exception had been noticed—namely, in a case of paraplegia, in which the contractions were not noticed. They were observable as early as the third month of pregnancy; indeed, as soon as the consistence of the uterus permitted. They were not owing to the irritation of examination, for as frequently as not the uterus would be found hard on first handling it, and then shortly to relax. After describing the physical state of the uterus and its contents during these conditions, Dr. Hicks alluded to the value of these contractions physiologically. He thought at least two advantages were derived from them; the one to supplement the heart's impulse in a part remote from its influence; the other to assist the ultimate disposition of the fœtus. He then proceeded to discuss at length the assistance these contractions gave the practitioner in the diagnosis of extra-uterine from uterine tumors, of uterine tumors from pregnancy, and of extra- from intra-uterine pregnancy.

ART. 227.—*Puerperal Temperatures.*¹

By WILLIAM SQUIRE, L.R.C.P.

The general conclusions deducible from the observations contained in this pamphlet are:—

1. That some elevation of temperature arises in natural labor.
2. That there is afterwards a considerable fall of temperature, which is favored by sleep.
3. That there is a subsequent exaltation of temperature, which has for its natural termination the secretion of milk.
4. That the bringing the method of observation here followed to the study of the puerperal state, would add an element of certainty to the principles and details of its management, and afford an additional guide for safe conduct through some of its complications.

¹ *Puerperal Temperatures.* London, 1871.

ART. 228.—*On Electricity in Sickness of Pregnancy.*

By S. IFFLA, L.F.P.S. Glasgow.

(Australian Medical Gazette, May.)

Dr. S. Iffla lately read before the Medical Association of Victoria "Some Observations on the Use of Electricity in Medicine." He directed attention to the use of this agent in the sickness of pregnancy, and assured the Society, in those intractable cases of sickness and vomiting during pregnancy where no food can be retained in the stomach, he had found it succeed when everything else had failed. He related one of his most remarkable cases. Nothing afforded the patient the slightest relief; she was wasted to a mere skeleton. Dr. Iffla says he never beheld a living object so ghastly; her face was of a livid hue; the surface of her body was bedewed with a cold moisture; she had not retained a particle of food for many days. He transmitted a steady current of electricity through the epigastric region; relief was prompt; the patient rallied, and was soon able to retain a small quantity of bland aliment. After a few more applications the sickness entirely ceased, and did not return. About three months afterwards she was safely delivered of a healthy child. In a later pregnancy of this patient the same treatment was adopted with success.

ART. 229.—*Pregnant Sickness.*

By METCALFE JOHNSON, M.R.C.S.E.

(Medical Times and Gazette, July 1.)

Mr. Johnson invites consideration for the phosphate of lime as a means of relieving the sickness consequent on the pregnant condition. For some years past he has been in the habit of prescribing the simple hydrated phosphate of lime of the Pharmacopœia in doses of from three to ten grains each, three times a day, suspended in water, and flavored according to the taste of the patient. He has tried the remedy dissolved in hydrochloric acid, as also the powder in the dry state, besides having had it made up into biscuits; but in none of these forms have the same agreeable results followed so frequently as when the simple hydrated phosphate has been used suspended in water.

ART. 230.—*On the Etiology of Habitual Abortion.*

By Prof. THEODORE OLSHAUSEN.

(Berliner klinische Wochenschrift, viii. 1, 1871; Schmidt's Jahrbücher, No. 5, 1871.)

The author agrees with Hüter that frequent abortions in the same woman cannot be explained by the view of a disposition to abortion. As every single abortion has its distinct cause, so surely has a succession of abortions in the same woman. A number of well-determined causes of the so-called habitual abortion have already been recognized; of these the most frequent are syphilis and retroversion or retroflexion of the uterus. A regular interruption of pregnancy during the second half of its course arouses at once a suspicion of syphilis, and an interruption before the fifth month a suspicion of retroflexion. With maternal syphilis the fœtus is generally between five and eight months old, and is then, as a rule, expelled some weeks, or even months, after death, so that the duration of the pregnancy frequently attains the normal period. Abortion from syphilis, however, does now and then occur in the early months. On the other hand, with retroversion, expulsion of the dead fœtus may be delayed until the ultimate period of pregnancy; this, however, is not possible when the uterus has remained retroverted for so long a time; it generally commences to rise from the pelvis about the fourth month, not suddenly and completely, but gradually and in the course of months. The latter takes place when the walls

of the uterus are quite lax and impressible, and the uterus itself seems to be perfectly filled, as may be made out on attempts at reposition, which, however, are quite superfluous, since after each is effected and the hand is removed, the posterior wall, distended with fluid, falls down again into the pelvis. The cases here alluded to form the exception to the cases in which the firm and thick-walled uterus suddenly and spontaneously undergoes complete elevation from the pelvis in the fourth month, or in which abortion with or without symptoms of incarceration ensues during the third or fourth month.

Among the less frequent causes of habitual abortion may be included certain uterine anomalies, chiefly defects in development. Thus, in a case of a woman who had aborted twice, the author found in the upper third of the vagina a vertical septum about one inch and a quarter in length; on each side of this was a short cervix with a round os; the aborted ovum had escaped from the os on the right side; the os on the left side also was slightly patent. At the third delivery, which commenced in the thirty-sixth week, both uterine orifices were opened, and at each a foot could be made out; on closer examination the two feet were found to belong to the same child. The foot placed near the left orifice was pushed over to the opposite side and extracted through the right orifice, during which process its life was lost. It was then made out that the septum in the genital canal did not extend for more than three-quarters of an inch into the uterus.

Anteflexion, also, of the uterus sometimes, though rarely, gives rise to abortion; rarely, because with anteflexion conception seldom takes place; should such, however, take place, abortion occurs generally, at least in the first pregnancy, before the end of the third month. In these cases the pregnancy does not, as a rule, result in compression of the uterine contents; usually the ovum is prematurely destroyed, probably on account of venous obstruction in the angularly distorted anterior wall of the uterus. In cases of anteversion rather than in those of anteflexion there may be slight compression of the uterine contents and consequent abortion.

It cannot be denied that an abortion may be caused by intense catarrh of the womb; in cases, however, where repeated abortions occur in connection with chronic uterine catarrh, there will probably exist some other causes which often escape observation.

The author observed one case in which a laceration of the cervix had been the cause of abortion. The woman at her first pregnancy had been delivered without difficulty; at her second confinement, which occurred at the seventh month, instruments were used; after this she had five successive abortions. During the last the author had an opportunity of examining this patient, and he then found an old fissure with sharply-cut edges on the left side of the vaginal portion of the uterus and involving its whole thickness. It was extremely probable that this lesion had been produced at the second confinement, and that a gaping of the cervix had thus been brought about which gave rise to detachment of the membranes near the os internum and consequent abortion.

Another and more frequent cause of abortion met with in plethoric females who suffer from profuse menstruation, is menstrual congestion. Here the abortion usually takes place in the first eight or ten weeks. Here the author remarks how wrong it is to maintain that absolute rest of the body continued for months is a sovereign remedy against abortion; on the contrary, it is indeed directly prejudicial. It can be of use only in those rare cases of abortion from anteversion or anteflexion; here, after reposition has been effected, a rest of from eight to fourteen days is required.

With regard to abortion in the early months of pregnancy, disease of the ovum here plays the chief part. Unfortunately, the pathology of the ovum is at present so little known that nothing exhaustive can be stated on this subject. The author at the conclusion of his article directs attention to one point. He observed one case in which the fœtus had been destroyed in six pregnancies in consequence of considerable tension of the umbilical cord; expulsion usually followed between the twenty-eighth and the thirty-fifth week of pregnancy. The favorable condition for the production of tension in every instance was a large quantity of liquor amnii.

ART. 231.—On the Treatment of Hemorrhage arising from the Retention of the Secundines after Abortion.¹

By JOSEPH GRIFFITHS SWAYNE, M.D.

(*The Lancet*, August 19.)

Dr. Swayne treated chiefly of abortions in the third, fourth, and fifth months; he pointed out their dangers from special liability to retention of the secundines, and consequent hemorrhage and septicæmia. Obstetric authorities were divided as to treatment, some favoring an expectant plan, with the use of plugging, ergot, styptics, and disinfectants to obviate hemorrhage and septicæmia, and others advocating manual interference. He remarked that the plug might sometimes cause an accumulation of blood in the uterine cavity, and showed a pad for preventing this, by making pressure on the fundus uteri. He pointed out the risks of intra-uterine injections when a large amount of fluid is thrown up with too much force. After remarking that the weight of obstetric evidence in the present day is in favor of manual interference, he stated his concurrence in this view; but that he preferred, instead of using the hand for removing the placenta, to employ an ovum-forceps, so modified as to act both as a dilator and an extractor.

ART. 232.—Version versus Forceps in Contracted Brim of the Pelvis.

By J. J. PHILLIPS, M.D., Assistant Obstetric Physician to Guy's Hospital.

(*The Lancet*, March 25.)

We quote these cases, reported by Dr. Phillips, merely to aid in forming a conclusion on the important and as yet undecided question of the proper treatment to be pursued in case of contraction of the antero-posterior diameter of the superior strait of the pelvis :—

CASE I.—On April 25, 1870, I saw, at Islington, a patient in labor with her seventh child. Her first pregnancy terminated prematurely at the seventh month, but the infant did not long survive its birth. This was the only child born alive. To this succeeded other premature deliveries; but it was believed that the fifth child and the sixth were born at term. In her last labor she was seen by a distinguished physician, who, failing to complete delivery by the forceps, performed version, and delivered her of a stillborn male child.

The patient was short in stature, but there did not exist any apparent deformity of the spine or of the lower limbs. When I saw her on the present occasion, she had been about fifteen hours in labor, and the os uteri had been fully dilated for some hours, but the child's head had not entered the pelvis. The pulse was of good power, and there were strong rhythmical uterine pains. The sacral promontory was easily reached by the finger. It was determined to administer chloroform. I then explored the pelvis, and found that the antero-posterior diameter at the brim, as accurately as I could measure it, was very little over three inches. I applied the long, double-curved forceps, though I hardly expected to succeed with them; but no justifiable amount of traction produced any effect in bringing the head through the brim. I then seized a foot; the child rotated easily, and, as the soft parts were dilatable, the lower half of the body was soon born. The shoulders were hooked down by carrying the trunk first well forward and then backward. I anticipated considerable difficulty in extracting the head, but steady traction, with one hand on the back of the neck and the other on the legs, soon brought the head into the cavity with a slight jerk. The child—a good-sized female one—was born asphyxiated, but was resuscitated by artificial respiration, though it was about twenty minutes before she breathed vigorously. I heard subsequently that the mother and child progressed favorably.

CASE II.—On the evening of the 3d of July, I was called to a patient of the Royal Maternity Charity, aged forty-one, who was in labor with her sixteenth child (of

¹ Read at the 39th Annual Meeting of the British Medical Association.

the fifteen children, seven only had been born alive. She had been delivered of the last five "by instruments," and of these, four were born dead. The patient had neglected repeated warnings to have premature labor induced. The midwife said that she had been delivered once by my predecessor in the Charity, Dr. Barnes, and that he advised labor to be brought on, in any subsequent pregnancy, about the seventh or eighth month. I found a fat woman complaining loudly, and urgently requesting instrumental assistance. The liquor amnii had escaped eight hours previously, and since then there had been strong labor-pains. The abdomen was very pendulous, the uterus lying forward, and the child's head had very slightly entered the brim. The pulse beat 180 per minute. I endeavored to restore the uterus to its proper axis by means of a broad binder, and subsequently applied the long double-curved forceps, which locked easily. I felt confident at first that the forceps would succeed; but, after using as much compressive power and firm traction for a considerable time as I deemed compatible with the life of the child, I desisted. Dr. Richards then kindly placed the patient under the influence of chloroform, and, introducing my hand, I carefully examined the brim of the pelvis. The conjugate diameter was estimated at about three inches and a half, but the foetal head was very large and firm. I turned the child without difficulty. The head engaged in the pelvis in the left oblique diameter; its liberation was effected after meeting with much resistance. The child, a large male, though at first apparently dead, soon recovered. The mother suffered from chronic bronchitis and emphysema, and her convalescence was rather slow, as indeed it had been after previous labors.

CASE III.—Early in the morning of the 18th of February, I was summoned to a case of difficult labor, in which repeated attempts had been made to deliver by means of the long forceps. The history which I obtained was, that the patient was the mother of three or four children; that each successive labor had been increasingly difficult; and that the last had terminated, with the aid of the forceps, in the birth of a dead child. The os uteri was dilated to the size of half-a-crown on the preceding morning; and at seven in the evening it was fully dilated, and the pains were frequent and very strong. Six hours later, as the foetal head was pressed into the pelvic brim, but would not pass through it, the forceps were applied; but the attempts to bring the head into the cavity were unavailing. I turned the child slowly but easily, the patient being fully under the influence of chloroform. The head became again fixed at the brim for four or five minutes, but was then liberated by firm traction. Contrary to expectation, the child, after a little attention had been paid it, began to breathe, and subsequently to cry lustily. I have no note of the estimated dimensions of the pelvis in this case; but the obstruction was due to a jutting sacral promontory, which had produced a marked depression on the left parietal and frontal bones of the foetal head.

ART. 233.—*On the Use of the Whalebone Loop in Midwifery Practice.*

By T. SHANNON, M.D.

(*British Medical Journal*, November 18.)

At the Autumnal Meeting of the Cumberland and Westmoreland Branch of the British Medical Association, Dr. Shannon read a paper on the "Use of the Whalebone Loop in Midwifery Practice." He had first seen the whalebone loop used by Dr. Tiffen, of Wigton, about ten years ago, and had used it constantly since that time. The instrument which he employed was a modification of the fillet used by Dr. Westmacott, and was of very simple construction. Only a small amount of damage resulted from the unusual amount of pressure occasionally exerted. In opposition to the views of Ramsbotham, it was pointed out that the instrument acted not only by direct traction, but by leverage also. It was the most common substitute for the short forceps, over which it had the advantages of simplicity of construction and ease of application; and it would also very often take the place of the vectis. The cases in which he employed it most frequently were those in which the progress of the head became delayed at the outlet. He had also used it with success when the head was arrested at the brim, and where others would have had recourse to long forceps. In occipito-posterior and in face presentations the instrument would be found useful.

Dr. Tiffen (Wigton) stated that in the earlier years of his practice he found that delays in labor cases were very common, and he often wished for some means for facilitating the progress of labor. He used to give ergot very frequently, but it acted badly on the child; and on looking out for some simple means, he fixed upon the "loop." He now used it in every second or third case, and considered it one of the most universally applicable of instruments.

Dr. Miller (Aspatria) found the loop most useful in pulling down the occiput when fixed behind the symphysis pubis, but for ordinary cases he thought Denham's whalebone forceps more useful.

Dr. Dickson (Whitehaven) often employed Denham's whalebone forceps, but had not tried the "loop." He thought that as much as possible ought to be left to nature.

Dr. Dodgson (Cockermouth) thought that instruments ought to be more frequently used; always, in fact, when they could be used with safety.

ART. 234.—On the Synclitism of the Equatorial Plane of the Fœtal Head in Pelvic Deliveries.

By HUGH L. HODGE, M.D.

(*American Journal of the Medical Sciences*, July.)

The number of the *American Journal of the Medical Sciences* for October, 1870, contained a paper from Dr. Hodge on the "Cynclitism of the Cervicobregmatic Plane of the Child's Head with the Planes of the Pelvis and Vagina in Cases of Natural Labor, the Vertex Presenting." The views maintained were in opposition to those of M. Nægelé, Dr. Matthews Duncan, and other writers, but more in accordance with those lately put forth by M. Kuenke, of Berlin. Under the firm persuasion of the truth of the views advanced, Dr. Hodge pointed out their practical importance in the management of all vertex presentations, especially wherein manual or instrumental assistance was required.

In the present paper Dr. Hodge gives illustrations of the great practical importance of this subject, and is of opinion that if the views of nature's mode of delivery of the head in pelvic presentations be correct, and if the deductions from these facts as to the proper treatment of these cases be substantiated two results will be apparent:—

1st. That simple tractile force should not be the sole resource of the practitioner, but that flexion of the head should be insured and maintained.

2d. That the operation of podalic version should always be regarded not as one of choice, but as one of necessity. It is fraught with danger to the infant and to the mother in all complicated cases; it demands great skill and experience for its execution; numerous and often unexpected difficulties are apt to be interposed, and yet the time allotted is exceedingly short. The whole process of descent must be accomplished in a few minutes, or the child, for whose benefit these risks are incurred, will perish.

ART. 235.—On Craniotomy.

By KARL ROKITANSKY, JUN., M.D.

(*Wiener Medizinische Presse*, 8-19, 1870; *Schmidt's Jahrbücher*, No. 7, 1871.)

Dr. Rokitansky, as an assistant in the obstetrical and gynecological clinic of Professor Braun of Vienna, during a period of somewhat more than ten years, had opportunities of observing out of 52,394 deliveries 103 cases of craniotomy. Thus 1 in 508.7 labors was completed by this operation. The author makes known his experiences upon this subject because he considers that there is still much difference of opinion as to the relative advantages and disadvantages of the methods of perforating by scissors and by the trephine; that in

cases of contracted pelvis it is doubtful whether the following head should be merely crushed and extracted without any perforation, or whether excerebration should be practised before extraction; that the question whether Simpson's cranioclast or the cephalotribe be the more certain instrument has evidently not yet been decided; that doubt is still raised as to the practicableness of perforation of the following head by means of the curved trephine; finally, that mistrust still exists as to the superior advantages attending the use of the cranioclast with the presenting as well as with the following head.

In the 103 cases, 86 operations were performed upon the presenting, and 9 upon the following, head. In 8 instances simple trepanning was sufficient. The cephalotribe was applied in 39 instances to the presenting, and in 3 instances to the following head. In 47 instances the cranioclast was used on the presenting, and in 5 instances on the following head. Simpson's instrument, as used by Professor Braun, has undergone several alterations. In the first place, it is stouter and longer, its total length being seventeen inches eight lines, whilst the original instrument measures fourteen inches six lines. At the lower end of the handles is a compressing apparatus. On closing the handles, their inner surfaces are not brought into contact, but an interval exists of about nine lines. In consequence of this there is a more energetic action of the compressing apparatus, the parts of the head lying between the blades are held more tightly, and slipping of the instrument is thus prevented. At the upper ends of the handles lateral hooks are placed for assisting manipulation. Contrary to Simpson's plan, the cranioclast was used exclusively as an extracting instrument, the complete blade having been thrust through the perforation, opening as deeply as possible into the cranial cavity, and the fenestrated blade placed over the face. On exerting compression, the head was extracted. In all the cases of craniotomy, extraction of the head was preceded by perforation with the curved trephine.

Of the 103 cases of craniotomy, 41 resulted in death. The results of the operations were more favorable in those cases where the cephalotribe had been replaced by the cranioclast. In Professor Braun's clinic, a much greater number of unfavorable cases had been treated by the cranioclast than by the cephalotribe, and yet the results of the use of the former instrument were in every respect superior. The prognosis of craniotomy is naturally very much influenced by the period at which the operation is performed, by the presence or absence of complications, by the previous attempts at delivery, and by the condition of health of the mother at the time of operation. Not less important is the choice of the instruments to be used, and of the manner of performing the operation, and as to whether compression and extraction of the head are made with or without previous excerebration. With regard to the use of the trephine, especially of the curved instrument, it was learnt from experience in these 103 cases that in every instance it was easy and convenient, whether the head was or was not presenting, and whether it was low down in the pelvis or still at the notch. Dr. Rokitsansky considers it an instrument free from danger both to the mother and to the operator; the skull is opened by a regular and gradual movement of the crown of the trephine, and not by a sudden thrust, as when the scissors are used. The trephine produces a round opening with smooth edges, and the formation of injurious splinters of bone is thus avoided. Whether a cranial swelling be present or not, the head can be perforated at any desired spot.

With regard to the cranioclast, which, in truth, is nothing more than an extraction instrument, it may be asserted that its application, which can be made in every diameter of the pelvis, is never attended with that severe pain which is so often caused by the introduction of the cephalotribe. It requires for its action much less room than the cephalotribe, since it is absolutely smaller than this latter instrument, and it requires still less room for its application when the complete blade is forced into the interior of the cranium. It can be readily closed, as the blades are locked in front of the vulva. The cranioclast never slips away; it is as useful with head as with breech presentations. In the latter class of cases it finds an extremely safe holding-point in the base of

the cranium. Injuries of the genitals do not occur; consequently, this instrument, rather than the cephalotribe, can be intrusted to the hands of the inexperienced.

ART. 236.—*The Treatment of Certain Cases of Placenta Prævia and of Post-Partum Hemorrhage.*¹

By THOMAS UNDERHILL, M.D.

(*British Medical Journal*, August 26.)

The author dissented from the universally expressed opinion that during syncope from "unavoidable" hemorrhage no operative procedures should be undertaken, but considered that condition rather favorable than otherwise for podalic version. He was also of opinion that, in cases of *post-partum* hemorrhage, should syncope supervene, it was more judicious to allow that condition to continue for a reasonable time than to use rash and hasty attempts to arouse the patient. The arguments were supported by cases.

ART. 237.—*Supplemental Mechanical Force during Parturition regulated by a Dynamometer.*²

By PROTHEROE SMITH, M.D., Senior Physician to the Hospital for Women, &c.

(*British Medical Journal*, August 26.)

After some allusion to the physiology of labor and to the agents of force exercised in parturition, viz., that of the voluntary and involuntary muscles, Dr. Protheroe Smith spoke of the injurious consequences when the normal balance of these powers was disturbed, specially marking the distinction between the capabilities of the uterus and of the muscles of the trunk; to obviate which, as well as to subsidize the power at fault, he advocated the judicious employment of an artificial force, according to certain rules, by means of his "obstetric pelvic band," which was described and exhibited. The peculiarity of this instrument was that it formed with the pelvis itself, as it were, a solid basis, which, by virtue of its immobility, allowed the accoucheur easily to employ the required aid to assist and expedite expulsion, and so, by following the natural movements, manifestly to shorten the period of labor and to lessen its risks. This was regulated by a dynamometer, described and illustrated by a drawing. It was so constructed as to measure and record accurately the force employed, imitating the normal parturient throes when wanting, especially by interrupted efforts like those constituting the compound character of such pains. In demonstration of this, Dr. Protheroe Smith gave a case of labor in which such means were employed, with the result. In this, each pain, as well as the amount and duration of every artificial effort, was recorded, and some valuable calculations and observations were appended from the pen of Professor Haughton, of Dublin, from which it appeared that the force used in parturition was much greater than was generally supposed by obstetricians.

ART. 238.—*On Catheterization of the Uterus.*

By Prof. A. L. VALENTA.

(*Wiener Medizinische Presse*, 25-39, 1870.)

1. Catheterization of the uterus is in itself a very easy and practicable operation.

2. The catheter is best and most safely introduced with the woman in the dorsal decubitus, and should be carried from the left side backwards.

¹ Read at the Thirty-ninth Annual Meeting of the British Medical Association.

² Ibid.

3. As a rule, the best instrument to use is a simple English elastic catheter plugged with wax.

4. With proper introduction of the catheter, spontaneous rupture of the membranes is, so to speak, excluded.

5. The catheter should be introduced at least so far that its extremity projects scarcely an inch from the vulva.

6. Catheterization should be continued until the intensity of the pains has been moderated; the average time for its use is six and a quarter hours.

7. As a rule, the catheter when used for deficiency in the pains should be removed after the orifice has dilated to two or three inches, and when for rapidity of delivery as soon as the os has commenced to dilate.

8. The more dilated the os uteri with protrusion of the distended membranes, the more efficacious is intra-uterine catheterization.

9. Of all methods for inducing abortion or premature delivery, catheterization of the uterus is the best.

10. For accelerated labor with regular pains catheterization of the uterus works admirably.

11. In cases where Cæsarean section might possibly be avoided after the death of the mother, this proceeding should always be attempted.

12. Catheterization of the uterus is an extremely efficacious means of ameliorating labor-pains.

13. The efficacy of intra-uterine catheterization in cases of weak pains before rupture of the membranes is beyond doubt.

14. Its action with weak pains after rupture of the membranes is not so satisfactory, but still in certain cases is such as cannot be denied.

15. Catheterization of the uterus should in the treatment of weak pains stand in the first rank amongst pain-urging means.

16. Catheterism does not prevent the application of other pain-urging or pain-exciting means.

17. Catheterization can with advantage be applied in connection with other means.

18. Catheterization works most favorably in primiparæ when the uterine activity is at rest; in multiparæ, after it has commenced.

ART. 239.—*Sudden Death after Parturition.*

By THOMAS MORE MADDEN, M.D.

(*Dublin Quarterly Journal of the Medical Sciences*, August.)

Dr. Madden read a paper on this subject before the Dublin Obstetrical Society. The author commenced by stating that "the causes of this lamentable accident are manifold: some cases appear to have occurred from the shock of difficult labor acting on a delicate constitution; others from the entrance of air into the open uterine sinuses; others from cardiac disease; in other cases, again, no cause whatever was disclosed by pathological investigation for the fatal event." The most frequent cause of sudden death after labor, according to Dr. More Madden, is thrombosis or embolism, or the separation of fibrin from the blood within the circulation. In the puerperal state the blood, as well as during pregnancy, contains a marked excess of fibrin as well as of serum, and a diminished quantity of red corpuscles. Moreover, during the puerperal state the blood is otherwise altered from its normal condition by the admixture of the products of the physiological changes which are then going on in the uterus. Under these circumstances the formation of coagula may be readily favored by anything that may derange the balance of the circulation; and this exciting cause may, in many of these cases, be found, observed Dr. More Madden, in the vascular excitement of difficult parturition, where a small fibrinous coagulum may be forced from the right ventricle into the pulmonary artery, and this remains until, by successive additions of fibrin, the calibre of the vessel is completely obstructed, and death necessarily and suddenly ensues.

The cause of death in two of the cases narrated by Dr. More Madden was very peculiar, and, as far as is known, is not mentioned by any other writer.

Dr. More Madden then proceeded to relate the particulars of five cases of sudden death after labor which had come within his own observation. Four of these occurred in the hospital with which he was connected (the Rotunda), and one occurred in private practice. In one case death was caused by extensive sloughing of the uterus, which was thus completely separated from the vagina; in one it resulted from the entrance of air into the uterine sinuses; in two from fatal syncope; and in one very remarkable case from rupture of a varicocele of the left ovarian vein.

ART. 240.—*Bloodletting in Puerperal Eclampsia.*

By WALTER LAMBERT, M.D., Amherstburg, Canada.

(*New York Medical Journal*, June.)

"Madame B. A., French Canadienne, was confined March 6th, by 'une sage-femme,' with her sixth child. Everything, I was informed, passed off naturally, as had also been the case in the previous labors. On the afternoon of the 9th she had a convulsion, followed by four more during the night and the next day, in the evening of which I was summoned to see her. I arrived at her bedside about six P.M. Found her comatose, in which state she had been some two or three hours. Body flaccid, and perfectly quiescent, with the exception of the movements caused by the respiration, which was excessively oppressed, with a great collection of mucus in the trachea and bronchi, causing that peculiar sound vulgarly termed the 'death-rattles.' Pulse rapid and full. Pupils insensible to light. In fact, every symptom indicated impending dissolution. However, I plunged a lancet (which I always carry, but rarely use) into the median basilic vein, and bled her *pleno rivo*, to the full extent of about fifty ounces, not in a graduated basin, as the late lamented Professor Elliot recommends in his posthumous article, but in a tin milk-pan, which was the most convenient thing that I could command. The only immediate effect of the bleeding was to relieve the difficulty of the respiration, and tranquillize the pulse: but it did not restore consciousness. I left her in that state between seven and eight P.M. on Friday night, supposing she would succumb before I reached home, which, by the bye, is six miles distant. Early the next morning I was informed that she began to rally soon after I left, and that she could then speak and take nourishment; but that she had no recollection of what had transpired the day before. I saw her at 9 A.M. of the 11th, and of course found her weak and pale, but conscious: respiration easy and pulse tranquil. Ordered—℞. Pot. bromidi, ʒss, syr. simp. aquæ, āā ʒij. Ft. sol. Dessertspoonful every three or four hours. To be supported with animal broths; and if the eclampsia showed any signs of reappearing, she was to have fifteen grains of the chloral hydrate, every one, two, or three hours, according to the symptoms. Fortunately she did not require it, and is now quite convalescent."

Dr. Lambert is convinced nothing could have saved this woman but blood-letting, and holds the same opinion in the case of another that he attended in January, 1862. In the latter, the eclampsia came on before the labor. Dr. Lambert bled freely, and had just left the house when he was called back to the patient, she being then in another fit. He took off the bandage, and let the blood flow again. Dr. Lambert does not remember how much blood was abstracted: but this he does remember, she had no more convulsions.

ART. 241.—*Two Cases of Puerperal Convulsions.*

Reported by BENJAMIN H. BISHOP, M.D., Hoosick Falls, N. Y.

(*New York Medical Journal*, June.)

Dr. Bishop puts upon record the two following cases, which have occurred in his practice within the past year, hoping they may contribute something

to a solution of the vexed question of the use of bloodletting in puerperal eclampsia:—

CASE I. Mrs. Russell, multipara, aged twenty-four; always "healthy;" was attacked with convulsions at the approach of labor. I was summoned; found her sitting up in bed; manner very excited. She had had four convulsions previous to my arrival. I attempted to perform venesection, but she offered such resistance that I relinquished the operation. I called an assistant; put her under the influence of chloroform, and proceeded to deliver with the forceps, there being sufficient dilatation of the os, and a complete "inertia" of the womb. Delivery was not accomplished until the expiration of about two hours, when a living, healthy girl, weighing eight pounds and a quarter, was born. The patient had several convulsions during the operation. After delivery I gave two drops of croton oil, which operated freely; and applied a blister between the scapulae. She continued to have convulsions until eleven o'clock, when she died apoplectic, six hours after delivery, and about thirteen hours after the first convulsion.

CASE II.—Mrs. P. Henley, primipara; aged twenty-six; healthy; was taken with convulsions on the evening of November 1st. A physician was called, but considered it nothing but a "fainting-fit," and prescribed accordingly. One hour after I was summoned, and arrived in time to see her have a most terrible convulsion. In about fifteen minutes she had another, this making the third. I tied her arm, and took about thirty ounces of blood, after which she rested comparatively easy, until about four o'clock the next morning, being four hours after the last convulsion. Labor not having commenced, I left her during this time. At four o'clock was called again, she being again in convulsions; she continued to have them until ten o'clock, when I called an assistant and put her under the influence of chloroform. Dilatation having taken place, I proceeded to deliver her, which I succeeded in doing (with forceps), after the expiration of about four hours, she having a convulsion every half hour during the operation. I gave croton oil, and applied a blister to the back between the scapulae. She had another slight convulsion about two hours after delivery, this being the last. She made a perfect recovery in about two weeks.

(B) CONCERNING THE DISEASES OF WOMEN.

ART. 242.—*On those Symptoms in Women which point to the Expediency of Instituting Local Examination.*

By ROBERT BARNES, M.D., London; Obstetric Physician to St. Thomas's Hospital, and Examiner in Midwifery and the Diseases of Women to the University of London and the Royal College of Surgeons.

(*The Lancet*, October 21.)

In determining the conditions which suggest local examination, Dr. Barnes first of all deals with *amenorrhœa*, and states that in the great majority of cases of this complaint in single women, no local exploration is necessary; but in some cases it becomes imperative; for example, *amenorrhœa* is sometimes presumptive only—that is, the secretion takes place, but owing to some imperfection of structure it is retained in the cavity of the uterus or vagina. This may be called *occult menstruation*. The suffering becomes urgent in the highest degree, and nothing short of an operation which shall liberate the retained secretion will save the patient. Some cases, again, of suppressed menstruation, leading to effusion of blood behind the uterus, setting up circumscribed peritonitis, and displacing the uterus so as to press upon the bladder, may cause retention of urine. Here again local examination is imperative. This may be said of every case of retentive urine. In almost every case of retention of urine in women the cause is external to the bladder, and in the great majority it is due to some disease or displacement of the uterus.

Menorrhagia is a relative term; that is, some women lose much more than the average without suffering in health; but whenever the loss continues profuse, obviously entails anæmia and general debility, and persists in spite of internal remedies, local examination is clearly necessary. We shall often find a

sufficient local cause in polypus, tumor, inflammation, congestion, hypertrophy, displacement, or malignant disease, all of which conditions require local treatment.

When we come to study the history of *dysmenorrhœa* we shall find abundant proof of the almost constant association of this disorder with a mechanical condition of the uterus impeding the easy performance of the function. So long, however, as the distress does not clearly affect the general system—so long as it does not exceed endurable bounds, and if it appears to be moderated by general remedies, it is not necessary to examine; but, in the contrary event, examination should not be long postponed. To postpone examination is to postpone discovery of the cause and effective treatment. This is more especially imperative in the case of a married woman in whom *dysmenorrhœa* is complicated with *dyspareunia* and sterility. Abortion, if not primarily depending upon some local disease or displacement of the uterus, is so very likely to be followed by some such condition that an examination should be instituted. If a sanguineous discharge, even periodical, resembling menstruation, goes on during lactation, especially if it be excessive in quantity and attended by leucorrhœal discharge, it may be almost confidently predicated that there exists some uterine disorder requiring local treatment.

Dr. Barnes next speaks of "*Dyspareunia*," and says it is incumbent upon every one who coins a new word to explain its meaning and to justify the innovation. Just as the word "*dysmenorrhœa*" has been coined in order to express compendiously the condition of difficult or painful menstruation, just as "*dyspepsia*" is used to signify difficult or painful digestion, we want a word to express the condition of difficult or painful performance of the sexual function. Such a word would be convenient in many ways. It would enable us to avoid the longer and coarser forms in use, by substituting a single word at once euphonious, expressive, and in harmony with medical language. After consulting with his colleague, Dr. W. H. Stone, whose high classical attainments give authority to his advice, Dr. Barnes has determined to adopt the word "*dyspareunia*." It is derived from *δυσπαρευνος*, a word used in this sense by Sophocles. However disagreeable the topic may be, it is impossible to escape the reference to a function so important. *Dyspareunia* in the female is perhaps the most absolute of all the indications of local malformation or disease. It calls the most imperatively for local examination as to its cause. In its milder forms it may make the sufferer's life a course of physical and mental wretchedness; in its severe forms it virtually unsexes her; and in any form it may lead to the most disastrous social calamities.

Taking this condition, *dyspareunia*, as a symptom of disordered function, we shall be astonished, when we proceed to direct examination of the organs concerned, at finding how many those causes may be, and what a wide field of pathological inquiry is associated with it. For example, there may be original defect or malformation; there may be obstructed tumors or growths, inflammation, dislocation, or altered form, disordered innervation—in short, almost every disease to which the sexual organs are liable may entail *dyspareunia* for one of its consequences; and in not a few of these diseases disregard of this symptom may entail positive danger.

The existence of *certain discharges*, such as blood, under conditions of quantity and times of occurrence which distinguish it from normal menstruation, mucus, pus, albuminous, aqueous, fleshy, or membranous, if at all protracted, points clearly to some local disorder as their origin which requires direct exploration.

Then there are some subjective signs, as pain, lumbo-dorsal, iliac, pelvic, or crural, and a sense of bearing down or pressure upon the rectum or bladder, entailing disorder in the function of these organs. These, especially if connected with abnormal discharges and other symptoms, call distinctly for local investigation.

Then we must observe the constitutional or remote effects of the foregoing conditions. Disorder of the pelvic organs seldom goes on long without entailing *anæmia*, disordered digestion, *hyperæsthesia*, neuralgia, or other manifestations of nervous derangement or prostration. Where these conditions are

observed in association with marked signs of derangement of function of the pelvic organs, the necessity for exploring the physical state of these is as clear as is that of examining the state of the heart or lungs when these organs perform their functions with distress, and the whole system suffers.

Such, then, is a summary view of the conditions, chiefly subjective, which point out to us the desirableness of instituting direct observation of the pelvic organs. This direct observation commonly enables us to analyze the groups of subjective symptoms; to determine the cause and significance of each, separately and collectively. It always brings to our assistance the discovery of other symptoms, entirely objective; and almost always puts it in our power to apply the proper treatment.

ART. 243.—*On the Prevention of Inflammation of the Mammary Gland arising from Accumulation of Milk during Childbed and Lactation.*

By MORITZ ALTSTÄDTER, M.D.

(*Wiener Medizinische Presse*, 10-14, 1871; *Schmidt's Jahrbücher*, No. 7, 1871.)

Inflammation of the breast is one of those evils which when once established present obstinate resistance to all treatment; it is only by preventing the development of the mischief that the practitioner is able to do any good. The following remarks apply only to those cases in which mammary inflammation is due to the retention and accumulation of milk. Although it is asserted on many sides that the retention of milk is the result and not the cause of the inflammation, clinical experience proves that the reverse very often takes place. Moreover, it can be shown from a theoretical stand-point that retention of milk may excite inflammation of the breast. In the normal condition the discharge of milk is not produced by a special contractility of the milk-passages, it must either be sucked out by the child or be withdrawn by some artificial means; contraction of the milk-passages usually occurs only under certain pathological conditions. What happens is this: the secretion of milk, strong even in spite of the abstaining from giving suckle, so overloads the milk-passages and their clustered terminal vesicles, that disturbances of circulation, hyperæmia, stasis, and finally inflammation are produced in the capillary network surrounding the acini.

The agent which Dr. Altstädter has found from experience to be particularly efficacious is not new, but in recent times has been much neglected: this agent is the extract of conium. Dr. Altstädter commenced several years ago to use this agent in all cases of the following kind: (1) to sensitive women who in the early days of lying-in complained of severe pains in the breasts; (2) to women not giving suckle, in whom the absorption of the milk did not keep pace with its secretion, and in whom consequently distension, hardness, and tenderness of the breasts lasted beyond their usual time, and by their increase threatened to result in inflammation; (3) to women in whom after weaning, the secretion of milk, in spite of moderate diet and suitable conditions, did not cease; (4) finally to those in whom inflammation of the breast had already been produced by retention and accumulation of milk. In numerous cases of the first three kinds, Dr. Altstädter had opportunities of convincing himself of the undoubted efficacy of conium, which acted quickly and safely and without any subsequent inconvenient results. He gives it four or six times in the day, in doses varying from three to twelve centigrammes. As in the administration of every other active agent, one must commence with conium in small doses, and increase the quantity gradually. The preparation must be good and fresh; to the frequent use of bad specimens of the extract, Dr. Altstädter attributes the bad reputation it has gained in many quarters. In cases where mastitis is already developed, no benefit is to be expected from the use of conium.

Of other remedies that have been recommended in extreme cases of retention of milk, those especially to be considered are: restricted diet, purgatives, and iodide of potassium. Restricted diet, so far from preventing the danger of the process of lacteal retention to mastitis, actually favors in many cases this pro-

cess, for it is well known from experience that the subjects of lacteal retention are usually women who are already suffering rather from a deficiency than from an excess of muscular tone and general strength. Drastic purgatives, like a restricted diet, reduce the strength of the patient, and therefore do harm. Concerning the action of iodide of potassium the author cannot speak from his own experience, since he has been so satisfied with the action of conium. He thinks that the action of the iodide in sensitive patients, as most lying-in women are, and on weak, depressed subjects, is likely to be attended with much disadvantage, whilst, on the other hand, conium, when administered with care, causes no subsequent unfavorable symptoms.

ART. 244.—*On Relapsing Mammary Abscess in Lying-in Women.*

By E. A. MEISSNER, M.D., of Leipzig.

(*Deutsche Klinik*, 20, 1871; *Schmidt's Jahrbücher*, No. 8, 1871.)

Relapsing or secondary abscesses during a lying-in are usually met with in those women who have previously suffered from an attack of mastitis not dependent upon the puerperal condition. Mr. Meissner has, however, although not in cases of the so-called sub-mammary purulent deposits upon the surface of the pectoral muscle, which in his opinion never give rise to secondary abscesses, observed during the course of childbed relapses of the above-mentioned kind which were quite independent of the seat and the mode of development of the original mammary abscess. It is quite immaterial whether any external influence or an obstruction to the secretion of milk has given rise to the original inflammation; when once parenchymatous inflammation of the mammary gland-tissue has attacked any part, the patient, even after evidently complete division of all puerperal induration, and after carefully emptying the cavity of the abscess, may at any moment have a fresh attack of rigors, which is speedily followed by hardness, swelling, and the formation of an abscess either in the neighborhood of, or at a considerable distance from, the seat of the primary abscess, or even in the other and previously sound breast. This is repeated six or eight times, and in rare cases still more frequently.

"The occurrence of these relapsing abscesses is attributed by the laity to deficiencies of diet, to catching cold, and even at times to a repressive treatment. How groundless is the last charge is proved by the fact that frequently relapsing mammary abscesses form after early and sufficiently large incisions, as well as after a decided expectant treatment of the primary abscess. These abscesses occur both in those who have discontinued suckling, and those who still use for this purpose the other and healthy breast. In the presence of these facts one must endeavor to base the pathogenesis of this affection upon the peculiar structure of the female mammary gland, upon the functional processes taking place in this organ during lactation, and upon analogous pathological processes. It is a plausible view that the local changes associated with the primary mammary abscess, such as inflammation, stenosis, stricture, and even complete arrest of the circulation, first in the adjacent blood, lymph, and milk vessels, and afterwards in the canals beyond, may give rise to a process of stasis which, when the inflammatory swelling in the emptied original abscess has melted down and the pressure from without diminished, results in the formation of fresh purulent deposits. Scanzoni attributes this affection to the pus of the primary abscess, which having become thick, and being prevented from flowing away freely by the small size of the spontaneously formed opening, acts as an irritant upon the neighboring gland-tissue, and sets up in this fresh inflammation and suppuration, which extends from one lobe of the gland to another. These views, however, do not explain those cases in which the secondary inflammation is developed at some distance from the original abscess, and also those in which the opposite breast is attacked. For an explanation of the phenomena, I seem almost compelled, after observation of the pyæmic symptoms which frequently occur in these cases, to recognize here the presence of a wan-

dering and metastatic lymphangitis, such as is presented distinctly under our eyes after injury and suppuration of the integument and the subjacent connective tissue."

The treatment consists in an antiphlogistic diet, the application of a suspensory bandage to each breast, and the avoidance of hard pressure or any other external cause of injury. As has been already stated, the formation of secondary abscesses cannot be prevented by any surgical method of treatment. Most internal remedies, whether emetics, drastics, tonics, or acids, are equally useless. Dr. Meissner recommends, however, as a useful remedy for the repeatedly relapsing evil, a weak solution of *arnica montana*, and states that after the administration of this, not only was further suppuration prevented, but half-developed abscesses disappeared.

ART. 245.—*On the Treatment of some Forms of Menorrhagia.*

By LOMBE ATTHILL, M.D. Univ. Dublin; Fellow and Examiner in Midwifery, King and Queen's College of Physicians, Obstetric Physician to the Adelaide Hospital, Dublin, &c.

(*British Medical Journal*, June 24.)

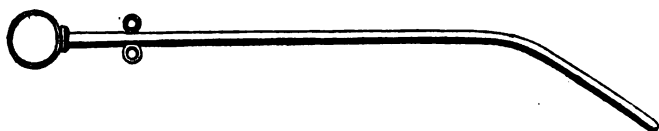
In this paper Dr. Atthill confines himself to the consideration of the treatment most suitable to cases of menorrhagia when occurring in connection with, or dependent on, sub-involution of the uterus, on granular ulceration of the cervix, or an unhealthy condition of the mucous membrane lining the body of the uterus.

Defective involution of the uterus after labor or abortion occupies a prominent place among the causes giving rise to excessive menstruation. That this should be the case is but natural, for not only is there, when sub-involution exists, an undue amount of blood present in the organ, but also the relaxed condition of the uterine tissue favors its exudation, and therefore, when the periodic determination of blood to the uterus takes place, as it occurs at each menstrual period, the moderate flow which should relieve that congestion becomes a profuse discharge, and often an exhausting drain. But the mischief resulting from sub-involution does not end here, for that abnormal state of the uterus predisposes to that unhealthy condition known as "granular ulceration" of the os and cervix uteri, a condition in which the mucous membrane of the canal of the cervix is hypertrophied, becomes exceedingly vascular, and is often everted to a considerable extent, a condition which increases the previously existing tendency to hemorrhage. Thus in not a few cases do we find the two causes present in the same patient. The author narrates a case which affords a well-marked instance of this, in which sub-involution was manifestly the primary cause of the menorrhagia, the ulceration being altogether secondary. In many cases sub-involution exists alone, or, on the other hand, ulceration may exist alone, either condition being fully sufficient to give origin to severe menorrhagia. As an instance of the former the following serves as an example: F. L., aged twenty-four, married about a year, was a delicate young woman of lymphatic temperament. Menstruation had always been profuse, especially if she took walking exercise, or exerted herself during the flow. She became pregnant after the occurrence of the second menstrual period following her marriage, but, having imprudently taken a long and fatiguing walk, she aborted at about the eighth week; the two subsequent menstrual periods were so profuse as to reduce her to a state of extreme debility. Ergot, gallic acid, &c., failed to do good. On examining her after the termination of these periods the uterus proved to be considerably elongated, the sound passing to the depth of three inches and a half; there did not exist any ulceration. The history of the case being altogether against the supposition of the existence of polypus, Dr. Atthill came to the conclusion that the menorrhagia depended on sub-involution; in fact, that the uterus had never regained its normal size and tone since the miscarriage, which had occurred two months previously. He, therefore, decided on carrying out a plan of treatment, the value of which he has

repeatedly tested—viz., the introduction up to the fundus of the uterus of ten grains of the solid nitrate of silver, and leaving it to dissolve there. This was accordingly done. The application produced considerable pain, which lasted five or six hours, but no further unpleasant results followed. Dr. Atthill confined this patient to bed for several days, but then allowed her to go about. Menstruation appeared at the regular time, and was moderate in quantity; and she became pregnant immediately afterwards.

Dr. Atthill calls attention specially to this case; first, as illustrating the occurrence of sub-involution as a result of abortion—a fact which is overlooked by many; next, as showing the dangerous menorrhagia which may depend on this condition of the uterus; and, thirdly, as proving the excellent results which follow the treatment adopted. Ergot, gallic acid, and, indeed, all other medicines, will frequently fail to check menorrhagia depending on sub-involution; and we must have recourse to treatment directed to the uterus itself; we must stimulate the organ to set up that healthy action by which it regains its normal size after pregnancy has terminated—a process to which Sir J. Simpson has applied the term “involution.” With this view, the author unhesitatingly advocates the adoption of the treatment practised in the preceding case. He knows no other so efficacious.

The mode of carrying it out is simple. The instrument known as Sir James Simpson's “*uterine porte caustique*” is introduced into the uterus just as an ordinary uterine sound. This little instrument (see wood-cut) consists of a



hollow silver tube, in size and shape closely resembling a sound; it contains a flexible stilette, which it fits accurately. As soon as its point is found to have reached the fundus of the uterus, the stilette is withdrawn, and through the instrument is pushed up, by means of the stilette, a piece of solid nitrate of silver reduced to the requisite size and weight, till it is fairly lodged in the cavity of the uterus. In doing this, there is but one caution requisite to be attended to; namely, that as soon as the piece of nitrate of silver has reached the extremity of the *porte caustique*, and before it is finally pushed out of the instrument—a point of which we can always be certain by observing how much of the stilette remains still unIntroduced—the instrument should be withdrawn to the extent of about half an inch; for if this precaution be not observed, it is possible that the nitrate of silver might be forced into the substance of the uterine wall, instead of being left free in its cavity—an accident which, though possible, is very unlikely to occur.

Menorrhagia resulting from ulceration of the os and cervix uteri is also of frequent occurrence. Mere abrasion of the lips of the os uteri is not sufficient to produce menorrhagia; but that unhealthy, spongy condition of the os and cervix, in which the mucous membrane lining its canal becoming hypertrophied and thickened, bleeds on the slightest touch, the os being patulous and the lips everted, is quite capable of originating severe menorrhagia.

“Mrs. B., a young married woman, aged twenty-four, who had never been pregnant, stated that she had become greatly debilitated by the excessive loss which occurred at each menstrual period. Ergot and astringents were exhibited by the mouth, and astringent lotions injected into the vagina, without producing the least effect. The use of the speculum proved the existence of extensive granular ulceration of the os and cervix uteri. Now, in severe cases, such as the one I am referring to, the unhealthy condition of the mucous membrane extends at least as high as the os internum, and we will fail to effect a cure unless our treatment reach every portion of the diseased tissue; therefore, with the view of permitting the necessary application to be made to the whole extent of the cervical canal, I commenced my treatment by introducing two

tents of compressed sea-tangle, two pieces being sufficient for the object I had in view, which was not to open the uterus to such an extent as to enable me to examine its cavity, but only to permit me to treat the entire of the cervical canal. I left these pieces *in situ* for twenty-four hours, and on withdrawing them after the lapse of that time, cauterized freely the whole diseased surface with fuming nitric acid. This did not cause any pain. On examining the os uteri a few days subsequently, I found it in a much healthier state. *The menorrhagia was entirely checked and never returned*; and, although a considerable time elapsed before the uterus regained a healthy state, still the progress of the case was rapid and the cure perfect; the only treatment subsequently necessary being the occasional application of a twenty-grain solution of nitrate of silver to the os uteri, and, at a later period, of a small blister to the sacrum; finally, not the slightest trace of the ulceration remained, and menstruation became in all respects normal."

The foregoing case illustrates perfectly the mode of treatment which Dr. Atthill as a rule adopts in cases of granular ulceration of the os and cervix uteri. Of course it is not always necessary to dilate the cervix uteri. If the case be recent, and we can satisfy ourselves that the unhealthy condition of the mucous membrane does not extend very high, the use of the solid nitrate of silver, of zinc points, or brushing the part over lightly with nitric acid, may be sufficient; but in the severe forms of the disease, such treatment will merely be palliative, and the only effectual one will be found to consist in that which the author advocates. If we meet with a case of menorrhagia in an otherwise healthy woman, which a careful vaginal examination proves not to depend on granular ulceration of the os and cervix or on sub-involution, it is our manifest duty to dilate the cervix and os internum, with the view of determining what the condition of the interior of the body of the organ may be. As a rule, the uterus is seldom in these cases much elongated, the increase being not more than to the extent of perhaps half an inch. This point is of importance in enabling us to decide as to the possible presence of an intra-uterine tumor; but the existence of these or of the condition under consideration, can only be solved by dilating the cervix and then passing the finger fairly up to the fundus of the uterus. It is surprising how little the patient suffers from this process, and how rapidly the os regains its natural size. No less remarkable is the entire absence of all unpleasant symptoms after a proceeding apparently so severe. Dr. Atthill has not the least hesitation in recommending the practice.

The mode of dilating the cervix is now so well known that the author does not dwell on it. He has quite given up the use of sponge-tents, and invariably adopts the plan, recommended by Dr. Kidd, of introducing a number of pieces of sea-tangle bougies. These are much superior for the purpose to the sea-tangle tents; for this reason, that they can be cut to any desired length, and that length should be the depth of the uterus, as previously ascertained by the use of the sound. The number of pieces introduced must vary considerably. If the cervix be rigid, three or four will be as many as can be safely inserted; but if it be relaxed, double, or even treble, that number may be with impunity inserted. If the smaller number be used, they should be withdrawn after the lapse of a few hours and a larger number inserted; but, in any case, the os internum must be dilated to a size sufficient to admit of the passage of the top of the index finger. To effect this by no means easy matter, the first step, after having withdrawn the sea-tangle, is to seize the anterior lip with a vulsellum, and with it to draw the uterus well down. This should be done by an assistant; pressure should also at the same time be made on the fundus: by these means the uterus will have been brought so low that, unless the pelvis be very deep, the point of the finger will reach the very fundus, and we are enabled to discover the presence of even a very small polypus, should it exist, or to detect that so-called "granular" condition of the mucous membrane, a condition which communicates a rough, uneven feel to the finger. This condition of the mucous membrane Dr. Atthill has several times met with. On the first occasion he was disappointed, and indeed surprised, at failing to detect a polypus, which, as he had announced to the class, he expected to find. Since then, enlarged experience has taught him that this granular condition of the lining membrane

of the body of the uterus is a by no means infrequent cause of menorrhagia, and he now looks on its detection as a possible result of the exploration of the cavity of the uterus. Dr. Atthill believes it to be the result of congestion or of sub-acute inflammation of the membrane lining the uterine cavity, which has resulted in producing a thickened, unhealthy, vascular condition of that membrane. To cure this condition, it is essential to destroy the so-called granulation, and to endeavor to excite a healthy action in the diseased part. With this view the author makes use of the strong nitric acid, applying it with great freedom over the entire of the inner surface of the uterus by means of a bit of lint fastened securely to a piece of wood or inserted through a loop of iron wire. The os should be brought into view by means of the duck-bill speculum, which also serves to protect the posterior wall of the vagina. While the anterior wall is guarded by the vulsellum, with which the anterior lip should be still held firmly, the stick or wire, armed with the lint saturated with the acid, should then be passed rapidly through the cervix, and swept freely but quickly round the interior of the uterus. Another piece of lint, soaked in water, should be then passed up to the os to protect the vagina from the irritation which any acrid discharge from the os uteri might cause; and the lip being freed from the vulsellum, and the speculum withdrawn, the patient may be left, the only after-treatment necessary being that the vagina should be syringed out daily with tepid water, and absolute rest in bed enjoined for some days. With due attention to these precautions, no ill effects need be dreaded.

Such is a brief outline of the treatment which Dr. Atthill adopts in cases of menorrhagia depending on the causes mentioned.

ART. 246.—On the Value of Arsenic in Menorrhagia and Leucorrhœa.

By J. H. AVELING, M.D.

(*The Lancet*, August 12.)

At the thirty-ninth annual meeting of the British Medical Association, Dr. Aveling read a paper on the above subject. The author believes that this remedy has not received from the profession the attention it deserves. Dr. Henry Hunt used it successfully in uterine disorders, and published his experience in 1838. Dr. Aveling has employed it in cases of menorrhagia for twelve years with great advantage. Besides improving nutrition, respiration, and secretion, he finds it to have a powerful decongestive action upon all mucous membranes. He administers small doses of arsenic either in solution or in granules, and continues them for weeks or months, as the necessities of the case may require. He believes the forms of menorrhagia and leucorrhœa most amenable to the arsenic treatment are those which have their origin in a hyperæmic condition of the uterus, which state the remedy cures by acting as a tonic and stimulant upon the vaso-motor nerves, causing the capillaries to contract and expel the superabundant blood.

ART. 247.—On Dysmenorrhœa.

By LOMBE ATTHILL, M.D. Dublin; Fellow and Examiner in Midwifery King and Queen's College of Physicians, Obstetric Physician to the Adelaide Hospital, Dublin.

(*Medical Press and Circular*, July 5.)

For practical purposes Dr. Atthill thinks it sufficient to class cases of dysmenorrhœa under three heads—namely, 1st, spasmodic; 2d, inflammatory; and 3d, mechanical dysmenorrhœa.

In spasmodic dysmenorrhœa the pain, as in the other forms, precedes the appearance of the discharge. In the majority of cases it is met with either in delicate girls of feeble constitution and leuco-phlegmatic temperament, or again in women of full habit, especially if they lead an inactive life. The flow is in

general scanty and its appearance does not bring any marked relief, the pain continuing more or less during the whole of the period; it is not, however, always equally severe, but is paroxysmal, being less so while the patient is warm, but becoming aggravated by the least exposure to cold. This form of dysmenorrhœa is by some writers described as neuralgic; its true nature, however, is very obscure, but its attacks can almost with certainty be cut short by the administration of sedatives and antispasmodics. Dr. Atthill generally gives a pill containing half a grain of opium, one of Indian hemp, and two of camphor, at bedtime—a combination which seldom fails to give at least temporary relief, or if for any reason opium is objectionable, he substitutes for it two grains of the extract of conium.

When the attacks have become habitual, and the patient is consequently obliged to have recourse regularly to the use of medicines to obtain relief, Dr. Atthill usually directs her to have by her ready for use a mixture containing two drachms of sulphuric ether, half a drachm of the liquor opii sedativus, three drachms of the tincture hyoscyamus, one drachm of the hydrate of chloral, two drachms of the spirits of chloroform, and water sufficient to make a six-ounce mixture. Of this she should take a tablespoonful every two hours. She should bathe the feet at bedtime, and if prevented by the pain from sleeping, take a full dose of the hydrate of chloral. This treatment is, however, only palliative, and as the cause generally lies in some fault of the constitution or system at large, our object should be to correct that condition by treatment carried out during the interval between the menstrual periods. Dr. Atthill is convinced that many cases of spasmodic dysmenorrhœa are due to congestion of the lining membrane of the uterus, and that this is specially the case in women of full habit who lead indolent lives, and in whom great benefit follows the adoption of more abstemious diet and more active habits, together with occasional use of saline purgatives.

Inflammatory or congestive dysmenorrhœa is a common affection, and the sufferings due to it are often very acute; the pain, however, is generally relieved by the appearance of the menstrual flow—a fact capable of easy explanation, for the loss of blood relieves the congestion which has existed, just as it would a similar condition existing in any other part of the body. In this form the uterus, or at least its lining membrane, is in a state of chronic inflammation, sometimes also there is associated with it an ulcerated condition of the cervical canal; sexual intercourse is generally painful, this being due to extreme sensibility of the cervix, a not uncommon result of chronic inflammation of that part of the womb. In the spasmodic form of dysmenorrhœa the pain is nearly always referred to the back, or to the lower portion of the abdomen. In inflammatory dysmenorrhœa, on the other hand, it is often more intense along the edge of the false ribs on the left side, shooting up to the shoulder, and down to the ovary of that side; pressure too over the ovary causes pain.

The treatment of inflammatory dysmenorrhœa includes three indications:—

1st. The removal of all causes keeping up the existing irritation. Foremost among these is the abstinence from sexual intercourse, for not only does the act itself generally cause pain and therefore must be injurious, but the occurrence of conception is to be specially avoided. Horse exercise, fatiguing walks, or even household occupations which necessitate much standing, should be given up, while the occurrence of constipation is to be guarded against.

2d. The inflammatory condition of the uterus is to be relieved by local depletion either by means of leeches applied before the menstrual period or by puncturing the cervix uteri and encouraging the bleeding. It is not suitable to the case of young unmarried girls, as it necessitates the use of the speculum; in them the leeches should be applied to the inside of the thighs, but in married women to the cervix uteri itself. Mild purgatives should also be from time to time administered. When by these means we have succeeded in relieving the congestion of the uterus, considerable benefit will be derived from blisters applied over the sacrum or to the abdomen a little above the pubes.

3d. If the case be of long standing, and the symptoms, though relieved, do not entirely disappear, showing that a certain amount of endometritis still exists, Dr. Atthill recommends us to cauterize the cervical canal, and even in many

cases the whole interior of the uterus, with strong nitric acid. Another method of relieving these forms of painful menstruation depending on chronic inflammation of the uterus is the use of glycerine. It is not suitable to the early stages of the affection, but it often answers admirably after more active treatment; it is specially useful if, from the presence of ulceration or any other cause, any strong caustic has been applied to the cervix, and, as sometimes happens, an unhealthy irritable sore remains. In such cases a pledget of cotton soaked in glycerine and introduced into the vagina will in twenty-four hours perfectly clean the sore, while the copious watery discharge which it produces will greatly relieve the local congestion. In chronic cases the injection of a few drops of the pure glycerine into the cavity of the uterus two or three times a week, as recommended by Dr. Marion Sims, is very useful. Dr. Atthill has met with but little benefit from the exhibition of medicines in inflammatory dysmenorrhœa. Where ovarian excitement exists, bromide of potassium in twenty-grain doses three times a day sometimes does good; the bichloride of mercury, in small doses and continued for a considerable time, has been recommended by several writers, but it has disappointed the author's expectations. Purgatives, especially the saline, seem the only medicines capable of producing real benefit; these, to do good, should be exhibited just before the menstrual period.

Dr. Atthill next considered those forms of dysmenorrhœa which depend on mechanical causes. Of these there are three varieties—namely, those in which the cervical canal is so flexed as to obstruct the escape of the menstrual discharge; secondly, those in which inflammation or congestion of the lining membrane exists to such an extent as to cause temporary closure of the canal or of the os internum; and thirdly, those in which, from some congenital malformation, or acquired cause, the os internum or the cervical canal throughout its entire length is permanently narrow and constricted. To this last may be added those cases in which fibrous tumors are met with in connection with and often probably causing dysmenorrhœa.

Painful or difficult menstruation is frequently met with in women in whom the uterus is flexed; but though flexions of the uterus may and certainly do sometimes interfere with the exit of the menstrual flow, they certainly seldom do so unless the flexion be complicated by the existence of chronic inflammation or the presence of a fibroid. In such cases we should certainly endeavor to relieve the flexion, and see if by placing the fundus in its normal position, and supporting it there by a pessary, we can relieve the patient before having recourse to surgical means, which are less suitable in this than in any of the other forms of mechanical dysmenorrhœa. In cases of inflammatory swelling of the lining membrane of the uterus, in which the os internum or some portion of the cervical canal becomes so narrowed in consequence of the tumefaction of the parts as to present a mechanical impediment to the discharge of the menses, in such cases, if the treatment already recommended fail, Dr. Atthill has no hesitation in having recourse to surgical treatment with the view of procuring relief; indeed, it is obvious that an operation which divides the cervix so freely as does that introduced by Sir James Simpson must be calculated to give permanent relief to the congested organ, but the operation should not be had recourse to till other means have failed, including the dilatation of the cervix by means of sea-tangle tents. Dr. Atthill unhesitatingly condemns the use of any of the metal instruments which have been suggested for the purpose of dilating the cervix; their use is attended with danger, as they act too rapidly and sometimes rupture the uterine fibres; several cases of severe inflammation and even of death are on record as following their use, while the sea-tangle is perfectly harmless.

ART. 248.—A Successful Method of Treating Certain Cases of Dysmenorrhœa and Sterility.¹

By PROTHEROE SMITH, M.D., Senior Physician to the Hospital for Women, London.

(*British Medical Journal*, August 26.)

After giving the pathology of obstructive dysmenorrhœa with the usual mode of treatment, Dr. Protheroe Smith called attention to that of dilatation by bougies, suggested by Dr. Mackintosh, and the modification of it by Dr. Simpson, and his operation of incision of the cervix by the hysterotome. Dr. Protheroe Smith's experience having suggested a doubt of the advantage of this practice, he was led to adopt the plan he now advocated in certain cases indicated by conditions which he mentions. To overcome the stricture of the os internum, he used *extension-force* by means of his uterine dilator, an instrument described and exhibited as being peculiarly suitable to this purpose. To restore the os tincæ to its natural form, per speculum, he incised it laterally at the commissures of the labia. Particular instructions were given for this treatment, which, during the last twenty-five years, he had employed with considerable success in remedying both obstructive dysmenorrhœa and sterility. Six cases were cited in illustration.

ART. 249.—On the Etiology of Puerperal Catarrh of the Bladder.

By Prof. R. OLSHAUSEN.

(*Archiv für Gynäkologie*, ii. 2, 1871; *Schmidt's Jahrbücher*, No. 8, 1871.)

The ischuria occurring during the first twenty-four hours of the lying-in is undoubtedly the result of the bending of the urethra which is necessarily associated with the sudden descent of the uterus after delivery. This kind of ischuria can in most instances be speedily removed by using the catheter once or twice. The fact that in many women thus affected there is no sensation of pressure of urine, although the bladder may be distended almost as far as the umbilicus, Prof. Olshausen explains by analogy with the reflex action of the sphincter ani and with the uterine pains; in consequence of the above-mentioned temporary distortion of the urethra, the urine cannot reach that spot at which the reflex sensations of urine pressure are excited—namely, the upper or central part of the female urethra (the fossa navicularis in man). The old view that the sphincter vesicæ serves for keeping the bladder closed can no longer be maintained; the use of this muscle, according to modern physiology, is to effect the excretion of the last drops of urine.

Of greater importance is the ischuria which depends upon swelling of the vulva and urethra; this does not occur before the second day. Still later, generally about the second week after delivery, may occur the ischuria resulting from peritonitis near the bladder (paresis of the detrnsor muscle).

Catheterism practised in slight cases of ischuria during the first twenty-four hours of lying-in is often followed by vesical catarrh (tenesmus, stranguary, presence of pus in the urine). None of the lying-in women under Prof. Olshausen's observation who had not been catheterized presented any symptoms of vesical catarrh.

¹ Read at the Thirty-ninth Annual Meeting of the British Medical Association.

ART. 250.—*A Case of almost Complete Closure of the Pregnant Womb.*

By Dr. HAYN.

(Berliner klinische Wochenschrift, 10, 1870; Schmidt's Jahrbücher, No. 4, 1871.)

The subject of this case was a woman twenty years of age, who since her seventeenth year had menstruated regularly and without any disturbance. At the full termination of her first pregnancy the following condition was discovered:—

When the pains had commenced, a digital examination was made. The os uteri was then found to be obstructed, and no trace of any opening could be found in this region. The presenting head of the child had already reached the inlet of the small pelvis, was covered by the distended and depressed womb, and felt like a ball, marked on its under segment and to the left side by two small pouch-like folds. The parenchyma of the uterus seemed to be soft, normal, and unaltered only at the spot where the pouch-like folds could be felt; and from this point, in a direction upwards and to the right side, was the uterine tissue found to be harder and more rigid than usual. The labor seemed as if it had not passed beyond the second stage, and the membranes had evidently not been ruptured, although the passage was slippery and moist as if from the flow of liquor amnii. The labor-pains had not diminished in intensity, and were divided by long intervals. On examination with the speculum, no trace of an os uteri could be observed, except at the situation of the two folds, where, at the lower and left part of the space between these, could be distinctly seen a small pinched cavity, which, on its left side, was covered by a valve. After this valve had been raised, a probe could be pushed into the womb. As dilatation of this opening without a cutting operation was barely possible, the surrounding tissue being mostly cicatricial, the rather hard scar was divided with a bistoury passed along a grooved director. The hemorrhage was considerable and soon arrested by injection of cold water. Scarcely had a minute elapsed after the incision, when the opening was found to have increased to the size of a thaler. Strong pains soon came on, and in less than two hours after the operation a healthy child was born. The lying-in progressed favorably. About two months subsequently, at the situation of the os uteri where the incision had been made a scar was observed; the os itself could be distinctly felt.

Remarks.—In this case delivery was prevented, not by simple adhesion or rigidity of the os uteri, but by a strong and almost complete occlusion of this orifice, which could be relieved in no other way save by a cutting operation. This condition explains the fact that the liquor amnii was not prematurely discharged, as it usually is in cases of simple rigidity of the edges of the os, but that it slowly trickled away through a small opening that existed. The favorable results of the operation furnish the proof of the amount of rough treatment the pregnant womb will tolerate so long as it is conducted with necessary foresight. With regard to the cause of this almost complete occlusion, it must, in the absence of any history of disease, ulceration, the use of caustics, and similar causes, be considered either as a congenital abnormality or as the result of some diseased condition which followed its course without giving rise to any noticeable symptoms. Against the first view is especially opposed, among other important reasons, the fact that in this case the os uteri was dilatable. The only remaining assumption is that in this case during pregnancy some diseased action had taken place, which resulted in cicatricial occlusion, without indicating its presence by any subjective symptoms.

ART. 251.—*On Prolapsus Uteri.*

By LOMBE ATTHILL, M.D., Fellow and Examiner in Midwifery, King and Queen's College of Physicians.

(*Medical Press and Circular*, September 27.)

Prolapse of the uterus is a displacement of frequent occurrence, productive of great discomfort, and in aggravated cases of actual suffering, but it is by no means so common as is supposed. Great numbers of women, especially of the very poorer classes, present themselves among the extern patients, stating that "the womb is coming down," but on examination the uterus is found to be in its normal position, the sensation of dragging and bearing down being due to a relaxed condition of the anterior wall of the vagina, which often protrudes slightly beyond the vulva, and is mistaken by the patient for the womb itself. When this proceeds to any extent, the prolapsed part contains a portion of the posterior wall of the bladder, and constitutes the affection known as cystocele. Prolapse may be partial or complete: by the former, we understand a protrusion of the cervix to a greater or less extent beyond the vulva; by the latter, the rarer form of complete extrusion of the whole uterus. When this occurs the vagina is everted, a portion of the bladder, and sometimes of the rectum also, being drawn down with it. In old standing cases of complete prolapse the mass hanging outside the vulva is frequently enormous; in them the surface of the tumor, especially in the neighborhood of the os uteri, is covered with extensive patches of ulceration, while the mucous membrane of the vagina is so altered by exposure and the effects of friction as to resemble true skin.

These aggravated cases are not, however, of very frequent occurrence; more commonly when the patient stands for any length of time a portion of the cervix protrudes, receding, however, when the patient assumes the recumbent posture. If, however, the case be neglected, the protrusion is sure to become gradually larger, and may in time remain permanently outside the vulva.

Numerous kinds of pessaries have been invented, with the view of supporting the uterus and retaining it in its proper position. The best for general purposes is Hodge's, the same which Dr. Atthill recommends in cases of retroflexion. We should, however, in case of prolapse, choose one with transverse bars; they prevent the anterior wall of the vagina from coming down, and as this is the part which first protrudes, it is important to support it. Another pessary in general use is the disk of boxwood, or vulcanized India-rubber; those made of the latter are much to be preferred. Globular ones are also employed. Dr. Atthill dislikes them very much; they are difficult to remove, and sometimes can only be extracted with the aid of a blade of the forceps, or by the instrument devised by Dr. McClintock for this purpose—an instrument very like a corkscrew in appearance, the spiral end of which is to be introduced through one of the holes in the pessary, and traction then made. But if the prolapse be large, or the perineum much relaxed, or if it have been destroyed by laceration occurring during labor, no matter what pessary is used, it will be forced out by the pressure constantly exerted on it. In such cases, unless we narrow the vagina by operative means, we can do but little for the patient.

This operation, originally suggested by Dr. Marshall Hall, has been modified and improved by Dr. Marion Sims. He removes the mucous membrane in the form of a V from the anterior wall of the vagina, the apex being near the neck of the bladder, and the two arms extending up on the sides of the cervix uteri. These denuded surfaces he then brings together by silver-wire sutures, passed transversely, thus including a longitudinal fold of the vagina, which has the effect of narrowing that canal considerably. In some of his more recent operations, Dr. Sims united the base of the V by a transverse dissection. This, without doubt, is the best operation which can be performed, and holds out the greatest promise of a radical cure. If there be great deficiency on the perineum, or if prolapse of the rectum (rectocele) exist, it may be necessary subsequently to perform an operation similar in principle, but differing in details, on the

posterior wall of the vagina. This proceeding is advocated by Mr. Baker Brown. The first of these operations has for its object the narrowing of the vaginal canal, the latter the restoration of the perineum; but neither of them has any direct influence on the uterus itself, which is often enlarged to a great degree. This enlargement in many cases is confined to the vaginal portion of the cervix, which becomes greatly elongated, while in not a few there is little if any descent of the uterus itself; the hypertrophied part may be removed by means of an *écraseur*. Great care, however, is necessary to prevent any portion of the wall of the vagina getting under the chain, for if this point be not attended to, it is possible that a fold of the peritoneum, or a portion of the posterior wall of the bladder, may be drawn in and removed, and give rise to very serious and probably fatal consequences. However, before having recourse to any operation, we should in all cases try palliative means. It is sometimes astonishing how much can be done by rest in the horizontal posture, by astringent injections, and by the judicious use of pessaries.

ART. 252.—On Prolapse of the Female Genitalia.

By Dr. CONRAD, of Pesth.

(*British Medical Journal*, November 25.)

At a meeting of the Obstetrical Society of London, on November 1st, Dr. Conrad read a paper on prolapse of the female genitalia. He maintained that prolapse of the uterus was, for the most part, a secondary affection. Prolapse of the vagina was the most important part in any descent of the female genitals, and uterine prolapse was but a sequel—the prolapsed vaginal walls pulling down the uterus. Of the different forms of vaginal prolapse, that of the anterior wall was most common, though frequently associated with prolapse of the posterior wall. A descent of the latter by itself was rare. Should there be a considerable elongation of the cervix, it might be certainly concluded that the vaginal prolapse was primary. The elongation of the vaginal portion of the cervix was of no diagnostic value, and was simply the result of mechanical irritation. Dr. Conrad believed that elongation of the supra-vaginal portion of the cervix and hypertrophy of the infra-vaginal portions were but secondary affections. The most important predisposing causes of prolapse were gestation, parturition, senile atrophy, &c. Prolapse in young girls occurred suddenly from a sudden shock through *contrecoup*. The replacement of a complete prolapsus of long standing should always be preceded by an emptying of the bladder and the rectum. The palliative treatment was best conducted by pessaries, of which the best was Meyer's ring, or Hodge's modification of it. For the radical cure, Dr. Conrad preferred Spiegelberg's operation. The vaginal portion of the cervix uteri, if greatly hypertrophied, was first removed by the galvanic wire. If the posterior wall of the vagina had become prolapsed with the uterus, he performed Dieffenbach's operation by removing a triangular piece of the mucous membrane of the posterior wall, having its apex to the os uteri, and for its base either the pared surfaces of the rent perineum, when this had been ruptured to form a new perineum, or, where this had not happened, the labia minora, so as to contract the orifice of the vagina, and aid in supporting the anterior vaginal wall. Spiegelberg then united the upper portion of the posterior vaginal wall with the interior anterior, according to Simon's operation.

Dr. Edis thought that the affection, on account of its great frequency, was too little studied. He had seen cases where a pessary had been introduced with the intention of keeping up an elongated cervix.

Dr. Phillips said that certain cases of prolapsus uteri were doubtless secondary to vaginal prolapse—cases in which the uterus was small. He believes that this class was a much smaller one than that where an increased weight of the uterus itself was the primary cause of its descent. This was associated with relaxation of the surrounding areolar tissue. The arguments brought forward by M. Huguier seemed to him conclusive against the view advocated by Dr. Conrad,

that elongation of the supra-vaginal portion was a secondary affection. He doubted whether any shock would produce displacement of the uterus in young women if the organ were not increased in weight and there existed no impairment of the surrounding structures.

Dr. Heywood Smith agreed with what had been said, that the chief cause of prolapsus uteri was an increased weight of the organ producing relaxation of its supports. Another cause, however, was not generally recognized—viz., that as age advanced, the lumbo-sacral curve becoming more or less obliterated, the plane of the pelvis thereby becoming more horizontal, the natural support that the normal position of the pelvis, together with the abdominal walls, gave to the pelvic viscera was removed, and they tended to prolapse from gravitation.

Dr. Routh believed that prolapsus uteri without elongation of the cervix was very rare. His own experience led him to agree with the conclusions arrived at by Dr. Conrad. For the relief of prolapsus there were three chief methods which had been practised. First, there was the perineal operation. Secondly, Emmett's operation, or Dr. Roger's modification of it, consisted in the removal of a large triangular piece of mucous membrane from the anterior, or sometimes from the posterior, wall of the vagina, and bringing the edges together by sutures. Both these operations succeeded in some cases, though not in all. Thirdly, came the plan of removing a portion of the cervix by the *écraseur* or actual cautery. This set up absorptive action in the uterus, and the elongation in many cases gradually but entirely disappeared. Dr. Routh thought that a cure, to be certain and radical, should comprise the three operations conjointly, or at any rate the last and one of the other two.

Dr. Barnes said that for some years we had all been pursuing a tentative course to find out the best mode of treating these affections. As to the mode of production of hypertrophy, he was scarcely prepared to agree with Spiegelberg and Dr. Conrad. The traction of the vagina might come in as a factor in the course of the disease, but the initiatory stage was, he believed, congestion and increased weight of the uterus. These cases were rare in women who had not borne children. The passage of the child through the cervix was a violent process; the cervix was forcibly stretched open; the mucous membrane was carried down before the head; the tissues of the cervix were bruised; small vessels were torn. Then, from getting about too soon and other causes, imperfect involution resulted, the lower part of the uterus especially was increased in weight and bulk, whilst the surrounding cellular tissue, having been greatly stretched and weakened, was less able to support the uterus. Hence continued congestion and perverted nutrition of the cervix. Small polypi on the edge of the os frequently complicated hypertrophy. Their structure was identical with that of the cervix from which they sprang. Dr. Barnes could not help thinking that simple prolapsus was far more frequent than Dr. Routh's observations would indicate. He would like to know how far the experience of others agreed with his own as to the usual extent of elongation being exactly five inches. He had found the cases in which this length was exceeded very rare.

Mr. Spencer Wells differed from Dr. Barnes in the opinion that restoration of the perineum was beginning at the wrong end in the treatment of prolapsus of the uterus and vagina. Prolapse of the anterior wall of the vagina was the first step in the progress downwards. But a sound perineum was the chief opponent to this prolapse. It would be absurd to expect the perineal operation to cure an elongated cervix; but in cases of ordinary prolapse, the perineal operation often effected a permanent cure. He had never seen an elongated cervix grow again after the vaginal portion had been removed.

The President (Dr. Braxton Hicks) said that when the uterus, from whatever cause, descended, by its pressure on the vagina, it acted like a foreign body and set up reflex irritation and tenesmus, which acting constantly, coupled with defecation and the pressure of the bladder, would tend to extrude and elongate the cervix. It would clearly be better, before attempting any plastic operation, to endeavor to gain shortening of the uterine supports, either by pessaries or by recumbency.

ART. 253.—*On Retroflexion and Antelexion of the Uterus.*

By LOMBE ATTHILL, M.D. Dublin; Fellow and Examiner in Midwifery, King and Queen's College of Physicians; Obstetric Physician to the Adelaide Hospital, Dublin.

(*Medical Press and Circular*, September 27.)

Dr. Atthill is of opinion, 1st, that retroflexion of the uterus is a common affection, and that it is met with both in married and unmarried females.

2d. That it is generally a secondary, not a primary, affection.

3d. That when it is due to congestion, or chronic inflammation of the uterus, terminating in hypertrophy, the catamenia are diminished in quantity, and frequently painful.

4th. But that when retroflexion is the result of sub-involution of the uterus, following labor or abortion, the catamenial discharge is increased in quantity, sometimes even to an alarming degree.

5th. That in addition to the symptoms common to all forms of uterine disease, viz., pain in the back, sense of weight, etc., we have not unfrequently, where the uterus is retroflected, reflex irritation of the bladder, stomach, and breasts, occurring as to frequency in the order given, and also constipation of the bowels.

The author proceeds to state that "It is seldom that much difficulty is experienced in recognizing a retroflected uterus; you feel a tumor in the recto-vaginal *cul-de-sac*, which you can in most cases raise by making pressure on it with the finger; and in doing so you can generally satisfy yourself that it is the fundus of the uterus, the cervix of which lies in its natural position; but the use of the sound will decide the question; for if the uterus be retroflected, the instrument will pass with its concavity towards the sacrum; and when introduced you can in most cases, by giving the handle of the instrument a half turn, raise the retroflected fundus to its normal position. It will, however, drop back as soon as the sound is withdrawn unless it be supported by means of a pessary. If the tumor be anything but the uterus, the sound will pass in its proper direction, viz., with the concavity looking to the pubes, while the tumor itself will not be influenced by rotating the instrument.

"Great difference of opinion exists among practitioners as to the best mode of treating cases of retroflexion. Dr. Meadows would endeavor to cure the inflammatory condition, which is the chief cause of the patient's suffering, before having recourse to mechanical treatment. I, however, think that where a pessary can be borne, the restoration of the organ to, and the supporting of it in, its proper position, will materially aid us in our efforts to effect a cure. Almost the only instrument that I use for the purpose of supporting the retroflected womb, is the modification of the ring pessary, known as Hodge's lever pessary; it is oblong in shape, and has a double curve. The best are those made of vulcanized India-rubber, on which the secretions of the vagina take no effect. I prefer also those with transverse bars; the cervix projects through the space behind the posterior one of these. Care must always be taken to select a pessary of suitable size and length; for if one be introduced which is too long, it will cause much discomfort, and perhaps actual pain; while, if the instrument be too small, it will slip out; you must, therefore, have a number of these pessaries of various sizes by you, and remember that the vagina varies greatly in size in different women. A properly fitting pessary generally affords immediate relief to the patient, and may be left *in situ* for several weeks, or even months. I always, however, recommend patients to have it removed after the lapse of ten or twelve weeks, and not have it replaced for a week. By adopting this precaution, all danger of unpleasant consequences following its use will be obviated. Should, however, the uterus be so tender to the touch that the pressure of a pessary cannot be borne, I first endeavor to relieve that condition by local depletion, effected by puncturing the cervix; but leeching will no doubt do equally well if you prefer that method; the greatest relief

often follows this practice. Dr. Hall considers repeated bloodletting, effected by puncturing the cervix, to be sufficient alone for the cure of flexions. This assertion is, however, too general; it is occasionally, but not generally, sufficient. I always use it as an adjunct, supporting the cervix by means of the pessary, and subsequently endeavoring to bring the organ back to its normal condition by local depletion, practised at intervals for a few days."

Finally, Dr. Atthill urges on us the necessity of bearing in mind that cases of retroflexion are occasionally met with which seem to cause neither distress nor even inconvenience to the patient, and that such cases should not on any account be interfered with.

But the uterus may be displaced in other directions besides backwards; the fundus may be thrown forward towards the pubes, the os being drawn upward, and looking somewhat towards the rectum. Antelexion, as this displacement is termed, is of less frequent occurrence, and is less amenable to treatment than retroflexion; but it seldom produces such distressing symptoms as the latter does. Dr. Atthill does not think either that the flexion is ever so marked as in the other, indeed he believes that many of the recorded instances of this displacement were merely cases in which the natural inclination of the uterus forward became excessive, the womb not being bent on itself, but merely sloping more anteriorly than was normal. In these cases, if tenderness on pressure, indicating the existence of inflammation, be present, Dr. Atthill punctures the cervix just as he does in cases of retroflexion, but seldom uses any pessary.

ART. 254.—*Radical Cure of Retroflexion of the Uterus.*

By T. E. BEATTY, M.D. Dublin; Master S.E. Lying-in Hospital; late President of the Royal College of Surgeons, and of the King and Queen's College of Physicians in Ireland; President of the Midwifery Section.

(*British Medical Journal*, September 23.)

The plan which Dr. Beatty has found most useful is to rectify the position and shape of the uterus by means of the sound, and then to pass one of Sir James Simpson's uterine stems with the bulb at the bottom into the cavity of the organ. This is not often easily done; for the sharp bend in the uterus is at times so rigid and permanent, that the instant the sound is withdrawn the organ flies back to its false position, as if with a spring. The stem once introduced is to remain for at least four or six weeks. But unless it be kept in its place it will fall out. To prevent that, Dr. Beatty inserts a flat boxwood pessary into the vagina, upon the smooth surface of which the bulb of the stem would rest, and would move freely over its surface, thus enabling the uterus to change its position as it is accustomed to do, according as the bladder and rectum are filled or emptied, or as the position of the woman is horizontal or perpendicular, while yet the organ is kept quite straight by the stem within. The daily use of a weak astringent wash thrown into the vagina with a syringe would keep the mucous membrane free and healthy, and the woman, from the first day, might go about without the least inconvenience. Dr. Beatty removes the pessary and stem at the end of the term specified, by which time the uterus will be found to have grown straight; but as a precaution against any relapse, he proposes the insertion into the vagina of a single ring of gutta percha, made by bending a rod of that material a quarter of an inch in diameter, into a circle of the same diameter as that of the boxwood pessary just removed from the vagina. When such a ring is introduced into the vagina, and the woman stands up, it assumes the same position as a flat pessary does, namely, a very oblique one. If the finger be passed into the vagina of a woman in the erect position whilst she is wearing a flat round pessary, the instrument will not be found lying horizontally, but very much sloped; its anterior margin will be felt low down, behind the pubes, while the posterior rises high in the back of the vagina behind the cervix uteri. The ring, when

introduced, assumes the same position, and while the posterior part of its periphery rises up behind the cervix, and offers resistance to the fundus if disposed to fall back, the cervix is permitted to pass through the wide ring, and descend to its proper position in the vagina. The uterus, previously straightened by the uterine stem, is thus kept in its natural form by this simple means. The ring may be removed at the end of six weeks, or may remain longer, for it does not interfere with any of the functions of the vagina.

Since 1862 Dr. Beatty has treated all cases of retroflexion of the uterus on the principles just mentioned and by the means described, and the result has been in almost every case a radical cure. As an example, he gives some particulars of the last case of the kind that was under his care.

A lady, twenty-four years of age, married four years, the mother of one child, born twelve months after marriage, began to complain two years ago of pain in the back and in the hypogastrium, with a sensation of bearing down. These symptoms gradually increased in severity until at last she was scarcely able to walk, and defecation was performed with great difficulty. On examination per vaginam, Dr. Beatty found a complete retroflexion of the uterus, with a very acute angle between the body and the cervix. The curve was so sharp that he was obliged to bend the uterine sound much beyond the usual curve before he could make it enter the body of the organ. By turning the sound the uterus was straightened, and the prominent tumor behind was completely removed. On withdrawing the sound, the fundus immediately came down, and the distortion was resumed. The lady was told the nature of her case, and that it would be necessary to introduce some instruments which she would wear for some time. Accordingly, on the 12th of last May, Dr. Beatty proceeded to pass the stem pessary, but he found great difficulty in doing so, for the uterus was so confirmed in its bent condition that, the instant the sound was removed, and before the stem could be made to enter, the fundus flew back to its unnatural position. Dr. Beatty succeeded at last by passing the stem alongside the sound while it remained in the uterus, and he then withdrew the sound, leaving the stem, which kept the uterus quite straight. The flat, boxwood pessary was then inserted, and the lady was directed to remain in bed that day.

On coming the next day to see her, Dr. Beatty found her so free from any inconvenience that she was unconscious of the presence of the instruments, and asked when he was going to introduce them. The instruments were perfectly in their place, and she was allowed to get up and go into the drawing-room, but not to go out. On the third day Dr. Beatty again examined and found everything in its place, and she said she felt better than she had done for many months. The menstrual period was expected in ten days, and she was cautioned that she would probably find it more profuse than usual. This was the case, and it lasted a week and then went off. She used the syringe daily with a weak solution of sulphate of zinc and alum, and went out walking and driving with perfect freedom. On the first of July, the instruments having been then seven weeks *in situ*, Dr. Beatty removed them, and found the uterus quite straight. He then passed the plain ring into the vagina, and she left town for the country the following day.

ART. 255.—*On the Use of the Infusion of Tobacco Leaves in Vaginitis.*

By LOMBE ATTHILL, M.D.

Medical Press and Circular, Nov. 22.)

In the number of the *Medical Press and Circular* for the 21st June last, Dr. Athill directed attention to the benefit which frequently results from syringing the vagina with the infusion of tobacco leaves, and he stated that he had never seen the least unpleasant results follow its use.

Since then, however, Dr. Athill has met with two instances in which faintness and nausea occurred as results of this treatment.

In one the patient was a young, recently-married girl, in whom the orifice of the vagina was exceedingly small, and marriage had consequently not been.

consummated; but the repeated attempts at intercourse had brought on an acute attack of vaginitis. With the view of alleviating her sufferings, Dr. Atthill directed his patient to use the infusion of tobacco as a vaginal lotion in the usual manner, by means of a syphon syringe. However, she became faint, and complained of nausea after having injected a very small quantity of the fluid. These symptoms passed off in a few minutes. The other instance occurred in the case of an unmarried girl of weakly leucophlegmatic temperament. In her case, too, the vaginal orifice was very small. The symptoms she exhibited were not so well marked as in the former case; still they were of sufficient importance to compel Dr. Atthill to give up the use of the remedy. The author is of opinion that in both of these cases the extreme narrowness of the orifice of the vagina permitted some of the fluid to be retained in the vagina, and that it was consequently absorbed. He is also inclined to think that both patients were peculiarly susceptible to the action of the drug. For the future Dr. Atthill will cease to direct the infusion of tobacco to be injected into the vagina in cases in which the orifice of that canal is not sufficiently patulous to allow of the free escape of the fluid. He finds that the addition of two or three drachms of borax to the infusion greatly enhances the value of the remedy; and he now invariably orders it to be added to the infusion of the leaves.

ART. 256.—*Treatment of Inflammation of the Cervix Uteri.*

By LOMBE ATTHILL, M.D. Dublin.

(*Medical Press and Circular*, Sept. 6.)

Dr. Atthill's rule in nearly all cases of inflammation of the cervix uteri, no matter what its stage, is first to relieve the congestion by puncturing the part. He only omits this when menorrhagia is present, for when this exists, depletion is, in general, unnecessary, and appears sometimes to be injurious. Our object in that case should be to check at once the weakening discharge. This is best effected by applying freely to the diseased surface a saturated solution of the perchloride of iron in glycerine, which is much less irritating than either the tincture or the liquor, and is generally sufficient, if applied freely, to check, temporarily, the bleeding. To apply it, we should always expose the cervix with one of Fergusson's glass speculums, and make our applications through it. However, this proceeding is but palliative, and as in all the severe cases the membrane lining the interior of the cervix is implicated in the disease, it is essential to dilate its canal throughout its entire extent, so that we may be able to treat every portion of the unhealthy surface. With this intention Dr. Atthill introduces one or two lengths of the compressed sea-tangle, taking care that they pass through the os internum. On withdrawing these, his usual treatment has been to apply the strong nitric acid freely to the whole interior of the cervical canal. This was the treatment adopted in the case of the woman narrated by Dr. Atthill. He confined her to bed for three or four days subsequently, and then treated the still ulcerated surface by the application of a solution of tannic acid in glycerine of the strength of ten grains to the ounce. Dr. Atthill strongly recommends the use of this application in cases of ulceration and inflammation of the cervix: it is especially useful if vaginitis be present. He saturates a pledget of cotton in the glycerine, pouring about half a drachm of it into the palm of his hand, and soaks it up with the cotton. He repeats this process several times till the cotton is thoroughly saturated, and then attaching a piece of string to facilitate its removal, introduces it up to the os uteri through the speculum, and leaves it there for twenty-four hours. The patient can withdraw it herself by means of the string. This treatment is often productive of great benefit, the tannin acts as an astringent, while the glycerine produces a copious watery discharge. The result of this combined action is, that the surface of the cervix, on the withdrawal of the cotton, looks paler and altogether much cleaner and healthier. If much irritation exists in the vagina, Dr. Atthill omits the tannin and uses the plain glycerine, as it relieves the vaginal congestion more effectually than when it contains an astringent. If

the nitric acid be once freely applied to the whole length of the cervical canal, and the ulcerated surface subsequently dressed with the glycerine of tannin, in many instances a cure will be effected in the course of a few weeks. If the surface be indolent, it may be necessary to apply to it occasionally a solution of nitrite of silver of the strength of from thirty to forty grains to the ounce; also, in cases of less severity, Dr. Atthill sometimes uses, instead of the nitric acid, the zinc points introduced into practice by Dr. Braxton Hicks; or, if the nitric acid has failed to effect a cure, he introduces them subsequently; they are often productive of great benefit, especially when no induration exists. They cause, however, a good deal of pain and considerable local irritation.

ART. 257.—*On the Treatment of Fibroid Tumors of the Uterus.*

By ALFRED MEADOWS, M.D., M.R.C.P.

(*The Lancet*, August 12.)

At the Thirty-ninth Annual Meeting of the British Medical Association at Plymouth, Dr. Meadows read a paper on the above subject, in which he combated the notion that these growths can be in any way diminished in size, still less cured, by any known therapeutical agent. Discussing the question from a histological point of view, he felt convinced that it is impossible to procure the absorption of any part of the solid constituents of these tumors; at the same time he showed that there is ample scope for the exercise of the greatest skill in the medical treatment of such cases, especially in regard to the two most constant and important symptoms—viz., hemorrhage and pain. The chief object of the paper was, however, to advocate more frequent resort to surgical treatment. The author expressed his belief that much more might be done in many of these cases than has been hitherto. Even in the sub-peritoneal variety he thought that, in cases where much distress exists, abdominal section ought to be resorted to more frequently; while in the interstitial and sub-mucous forms, it ought to be the rule in practice always to endeavor to assist nature in her method of cure—viz., by expulsion. For this purpose three objects should be kept steadily in view: 1st. That all obstructions should be removed by freely dividing the cervix in several directions. 2d. That the tumor should be separated from its attachments, not necessarily all at once, but by successive stages. 3d. That as far as possible continuous uterine action should be maintained by the exhibition of ergot and other oxytocic agents. A case was cited in illustration of the value of this combined method of treatment.

ART. 258.—*Two Fatal Cases of Unilateral Hæmatometra with Bipartite Utero-Vaginal Canal.*

By Dr. LUDWIG NEUGEBAUER, M.D.

(*Archiv für Gynäkologie*, 2, 1871; *Schmidt's Jahrbücher*, No. 7, 1871.)

CASE I.—The patient when seventeen years old, at the first appearance of the menses, which was attended with much pain, observed in the hypogastrium a swelling somewhat larger than the fist. This did not subsequently disappear. With regular intervals menstruation was repeated five times as profusely as on the first occasion, and at every menstrual period the hypogastric swelling increased in size. For a long time afterwards there was amenorrhœa, with relief from the severe pain. Between eighteen months and two years later, menstruation returned, and with such severe pain that the patient was kept to her bed. On examining the patient, Dr. Neugebauer found on the right side of the abdomen a long oval tumor, which passed from the pelvic cavity upwards and to the right side into the abdomen, and reaching almost as far as the level of the umbilicus. It was very painful on pressure. The surface was smooth, but at the left edge of the swelling there was a kind of projection of the size of a dried date, which on pressure was quite painless. This swelling filled almost entirely the inlet of the pelvis. The diagnosis was: (1) bipartition of the womb and

vagina; (2) congenital occlusion of the permanently undeveloped lower portion of the right vagina; and (3) consequent accumulation in the corresponding utero-vaginal canal of the menstrual fluid, secreted into the right womb. This diagnosis was based upon: (1) the position of the tumor; (2) its length and tubular form; (3) its internal connection with the patent vagina on the one side and with the bladder on the other; and (4) its distinctly circumscribed figure. The patient having been placed in the lithotomy position, an incision was made with a sharp-pointed bistoury; a dilator was then introduced, and the wound extended. The fluid which came away was of the thickness of honey, glutinous, of a dark reddish-brown color, and free from smell. No attempt was made to assist the slow and spontaneous discharge of this fluid.

For some time after the operation the tumor gradually diminished in size, the discharge lessened, and the general health of the patient seemed good. On the fourteenth day, however, instead of the expected menstruation, there was a sharp attack of peritonitis, which ended in collapse and death at the end of three days. A post-mortem examination was not permitted.

CASE II.—The subject of this report had menstruated regularly for three years, but at each period had suffered severe pain. During the interval her health had been tolerably good. Dr. Chwat, under whose care this patient was, found, on examination, that the utero-vaginal canal from its upper end downwards to the level of the neck of the bladder was bipartite, and that the utero-vaginal canal on the right side opened freely into the vagina; the left canal terminated near the bladder, and had been converted into a large, slightly bent, fully distended, and indistinctly fluctuating tumor, which was painful only on strong pressure.

The tumor was opened by puncturing it at its lowest part with a uterine sound. The contained fluid was black and treacly. Death from peritonitis occurred forty-eight days after the operation. No post-mortem.

Dr. Neugebauer has found in literature fifteen cases of a similar kind to the two reported, and he has added five others which were diagnosed as hæmatocoele. In these cases the accumulation occurred sometimes on the right, at others on the left utero-vaginal canal; only more frequently on the right side. In some cases the uterus alone, in others a larger or smaller extent of the vagina, was distended.

The youngest patient in whom hæmatometra was developed was fourteen years of age, and the eldest twenty-seven years.

Treatment.—In four cases no operation was performed. In one the treatment is not recorded. Fifteen cases were treated by different operations.

1. Simple puncture of the tumor by means of a uterine sound.
2. Simple puncture by means of a trocar.
3. Puncture with a trocar and immediate extension of the wound by incision.
4. Puncture and subsequent extension of the wound by incision after an interval of several days.
5. By incision.
6. By excising a piece of the wall of the tumor.

In eight cases the treatment resulted in recovery, and in seven in death.

The larger the opening into the tumor, the more favorable seems to be the prognosis of the operation. Dr. Neugebauer, in conclusion, recommends the application of the galvano-caustic wire, as by this means a wound is formed which is protected from self-infection by the eschar, and, at the same time, cannot close before this has fallen away.

ART. 259.—*A Case of Labor occurring in Connection with a Large Ovarian Cyst.*

By J. C. REEVE, M.D., of Dayton, Ohio.

(*American Practitioner*, April.)

Dr. Reeve reports a very interesting case of this rare complication. A very natural classification of labor complicated with ovarian tumors has been made into—first, those cases in which the tumor descends into the pelvis before the child and obstructs its progress; and second, those in which it remains in the

abdomen above the child, and may thus interfere with the process of parturition only by the distension it occasions, or may complicate it with the serious accident of rupture of the cyst. To the latter class belongs the case about to be reported, and if warrant be needed for its publication it is to be found in the exceeding rarity of such cases on record.

Dr. Reeve was called in consultation, on the 6th November, 1870, to see Mrs. C., and he gives her history as follows: "She is twenty-eight years of age, rather below the medium stature; was married in August, 1867, and within a year from that time suffered considerably from pain in left side. In April or May of 1869 she began to increase in size, and while picking peaches during the following fall felt a sensation of water rolling about in her. For these ailments she went under the care of Dr. H., the gentleman then present; and her disease was believed to be ascites, and it very probably was; at least she was cured by the administration of hydragogue cathartics and diuretics. Of this there seems to be no question.

"Her last menstruation ceased on the 12th February, 1870, and her size has steadily and rapidly increased from the time she considered herself pregnant; she now measures fifty-three inches around the abdomen; fluctuation is very distinct, exceedingly so, and equal in every direction except from left hypochondriac to right iliac region; dulness upon percussion at every accessible point, but she is so unwieldy and helpless that changes of position for comparison of different regions are impossible. A solid body can be felt in the right iliac region, and movements of the limbs of a child were recognized there. In the left iliac region the placental bruit is very distinct, but the sounds of the foetal heart cannot be found. There is no very marked enlargement of superficial abdominal veins; there is pitting of lower part of abdomen under pressure of the stethoscope; no oedema of the feet, but says she has had some. An internal examination showed the os to be very high; it could scarcely be reached even by using two fingers. It was soft and without projection of lips. A round, solid body could be just felt above the pubis, evidently the child's head. No fluctuation from the vagina to external surface, or the reverse. She is in excellent spirits; pulse ninety-two, of good strength; respiration easy now, but she has suffered from some severe and alarming 'smothering spells;' appetite is good, tongue clean, but bowels constipated.

"In consultation I found her physician of opinion that it was a case of ascites complicating pregnancy, and in favor of immediate tapping. My opinion was that the great enlargement was due to an ovarian cyst, the diagnosis being based principally upon the absence of any evidence of fluid to be obtained by vaginal examination, which must have been the case had it been a case of ascites, and upon the absence of any organic disease sufficient to account for so large a peritoneal collection. I was opposed to the operation of tapping because I was then misinformed as to the date of her last menstruation; was under the impression that her time was already up, and that the operation would be followed immediately by labor, and the risks of the puerperal condition would be increased. Moreover, I had not had time, either for sufficient study or observation of so novel a case, to feel justified in interference to that extent.

"Our prescription was limited therefore to compound powder of jalap to open the bowels, and careful directions were given as to position, and especially as to diet. Heretofore she had been eating a good deal of vegetable food likely to increase her distress by producing flatulence. I was engaged to attend her during labor.

"On the 9th of November I again visited the patient, first confirmed my former diagnosis, and then made a closer scrutiny of some other points—for instance, the heart, which I found as before healthy, and urine non-albuminous. I now recommended immediate operation, and, with the further light I then had as to the time of her expected confinement, urged it strongly. Her friends declined, however, to have anything done, and I awaited her labor with much anxiety. She had been far more comfortable since her bowels had been kept free; had no 'smothering spells' after the first visit.

"November 16th, was called to attend her in labor; the period of two hundred and eighty days will be up on the 19th. She now measures fifty-three

inches around the abdomen, but feels in good health and is in most excellent spirits. Pains began yesterday about noon, and have been recurring irregularly ever since, but quite light. Now, 5 A.M., they return every seven to ten minutes, and are tolerably severe, not expulsive in character. Secretion of passages free; os well open and dilatable; would admit the hand if necessary; membranes protruding; head felt at upper strait, but position not made out; she has vomited two or three times. By 8 A.M. she had vomited once more; pains were more severe and expulsive; the membranes were now ruptured during an examination; she then passed urine, as she had done several times before. At 8.20 the pains were severe and frequent; she was considerably distressed, her breathing being labored. The os was now pushed up over the head; position, left occipito-anterior. Her labor continued regular and tolerably severe; still her distress did not seem to increase. I stood prepared to assist her with the forceps whenever the head should be stayed in its progress, or she should seem to require it. I constantly urged her not to bring her voluntary expulsive power to bear upon the child, and trembled with every pain for fear of rupture of the cyst. The uterus fortunately proved to be alone equal to the task, and at 10 A.M. delivery was accomplished of a male child, alive and healthy, which weighed about seven pounds. After delivery of the placenta I tried to gain some information as to the tumor per vaginam, but could not; no fluctuation could be perceived. Measurement of the abdomen after delivery, forty-nine and a half inches.

"On the 18th of November I found her comfortable, and could then make a little better examination of the abdomen than before. Found it well rounded up, not flat; and dull upon percussion everywhere except in the left lumbar region. From this time I saw the patient no more. My proposition was to tap her as soon as convalescence was established, and then, should the cyst fill again, of which event occurring I thought there was less probability than usual, because its growth had been coincident with pregnancy, to operate for removal of the tumor. But she and her friends were impressed by the former cure, and influenced by her physician's opinion that her present disease was the same as the former attack cured by him, she returned to her old home and placed herself under his care. The next information I received of her was an invitation to be present at the operation of ovariectomy. This operation was performed by Dr. Dunlap, of Springfield, on the 31st of January last, and to that gentleman I am indebted for the following particulars: right ovary affected; tumor consisted almost entirely of a single cyst, the walls of which were so thin as scarcely to bear blowing up; contents clear, weight of solids and fluids eighty-seven pounds. Unfortunately, the death of the patient occurred on the 3d of February."

ART. 260.—*A Case of Pelvic Tumor obstructing Delivery.*

By Dr. HABIT.

(*Wiener Medizinische Wochenschrift*, 8, 1871.)

The patient, who was pregnant for the fourth time, had been delivered of her last child thirteen years before; the two previous labors had also been favorable. Dr. Habit, on making an examination of the abdomen of this patient, who was now anæmic and emaciated, made out the following: Through the lax abdominal walls could be felt two distinct and well-marked tumors. The one on the left side presented the ordinary appearances of a pregnant uterus and reached as far as the epigastrium. The fœtus seemed to be one of about seven months. The uterus was very loose. The second tumor passed upwards and outwards from the crest of the right ilium, and in consistence and size resembled the uterus about one day after delivery; it was tough, elastic, and movable. Between the two tumors was a deep furrow; on vaginal examination the whole pelvic cavity was found to be filled by an oval, tough, and elastic growth, which passed from the right side downwards as far almost as the floor of the pelvis. Between this growth and the left wall of the pelvis was a small sickle-shaped

interspace, the greatest width of which was not more than one inch. Dr. Habit diagnosed a sub-peritoneal fibroid tumor springing from the lower and back part of the uterus on the right side. As the favorable period for inducing premature birth had passed by, it was decided to wait for spontaneous delivery. This commenced about fourteen days later. When the head inclosed within a large bag had been forced downwards between the tumor and the side of the pelvis, and was much compressed, chloroform was administered and the pelvic tumor returned by introducing the whole hand into the vagina. Ten minutes later there was spontaneous birth of a child, ten pounds seven ounces in weight, and sixteen and a half inches in length.

ART. 261.—On Cancer of the Uterus and Chronic Inflammation of the Cervix Uteri.

By LOMBE ATTHILL, M.D. Dublin; Fellow and Examiner in Midwifery
King and Queen's College of Physicians.

(*Medical Press and Circular*, October 4.)

The chronic inflammation of the cervix uteri having been mistaken for that which results from cancer, Dr. Atthill arranges the symptoms of both in a tabular manner, so that we may be enabled to form a correct diagnosis between these two affections.

In Chronic Inflammation of Cervix.

The history of the case is always chronic, often dating back several years.

Pain—always present; generally more severe over left ovary than elsewhere.

Menstruation—Scanty and frequently painful.

Digital examination—Cervix feels hard to the touch, but smooth; pressure with the finger causes pain.

Uterus—Movable.

Vagina—Not implicated.

Discharge—Inodorous and mucopurulent.

In Cancer.

History—Symptoms seldom noticed till within a comparatively recent period.

Pain—Seldom felt in the early stages; most severe in the back.

Menstruation—If patient be young will be increased; if advanced in life, hemorrhage may be the first symptom noticed.

Digital examination—Cervix indurated, uneven, and nodulated; pressure does not cause pain.

Uterus—Fixed.

Vagina—Frequently implicated.

Discharge—Generally fetid.

Having given an outline of the ordinary course which cancer of the uterus follows, and dwelt on its leading features and symptoms, Dr. Atthill in conclusion alludes to the treatment. With the view of deadening the pain, opium in some shape or form must still be our main reliance; chloral will often fail, if the sufferings be excessive, even to produce the sleep. If it does not, Dr. Atthill prefers it to opium. It will have to be given in doses of from twenty to forty grains at bedtime. One objection to the administration of this medicine in large doses is the quantity of fluid in which it is requisite to have it dissolved—namely, ten grains of the salt to an ounce of fluid. The syrup of orange-peel best cloaks its nauseous taste; the addition of half a grain of codia to each dose greatly increases its hypnotic powers. Opium is best administered either per rectum, in the form of suppositories, or by being injected subcutaneously, commencing with $\frac{1}{2}$ or $\frac{1}{4}$ gr. of morphia. No doubt the subcutaneous injection of morphia acts more rapidly, and its effects last longer than those of opium administered in any other manner, while it is less deleterious in its after consequences. Of astringents administered with the view of checking the hemorrhage, gallic acid is, Dr. Atthill thinks, the best. If the bleeding be very severe, we may be compelled to plug the vagina; but Dr. Atthill prefers in these cases endeavor-

ing to stop it by the direct application to the cervix of a pledget of cotton saturated with a strong solution of the perchloride of iron in glycerine.

To lessen the fetor of the discharge, add half an ounce of Condyl's fluid to a pint of tepid water, and direct this quantity to be thrown up the vagina at least twice a day. Another lotion which is sometimes useful both in allaying the pain and lessening the discharge is a solution of nitrate of silver of the strength of ten grains to the ounce—two or three ounces of this should be injected at a time. Of internal remedies, arsenic and iron are the only ones which will effect any good. Dr. Atthill confines himself nearly altogether to the administration of the latter; and of its various preparations he prefers either the tincture of the perchloride, or, if the stomach be irritable, the ammonia-citrate of iron. The diet should of course be nourishing, but unstimulating. In cases of cauliflower excrescence there is always the chance, if the case is seen early, of being able to prolong life by amputating the cervix, or of destroying the growth by repeated applications of caustic potash.

ART. 262.—*On the Treatment of Cancer of the Neck of the Uterus and Allied Structures by the Injection and Application of Bromine.*¹

By WYNN WILLIAMS, M.D.

(*The Lancet*, August 12.)

The author commenced by making some remarks on the spontaneous removal of malignant tumors, from the study of which he was led on to the injection of bromine into cancerous tumors of the uterus and other parts. He stated that the eight cases published in the last volume of the *Obstetrical Transactions* still continued well. He entered into full details as to the manner of injecting these deposits and the care required in the use of bromine, both as an injection and application, and stated that before its use the surrounding parts should be well protected by a solution of soda. He exhibited the various instruments he had had made for the injection of bromine. He gave the history and successful treatment of a well-selected case of medullary carcinoma of the uterus in the state of disintegration and ulceration by this method. He also gave the particulars of a case of epithelioma of the lower lip which had been previously removed by operation. On the return of the disease the patient was sent to Dr. Wynn Williams, who, by two injections of bromine, caused the entire, and, so far, permanent removal of the disease. A vignette of the patient was exhibited.

ART. 263.—*On the Diagnosis of the Least-known Varieties of Uterine Inflammation.*²

By EDWARD J. TILT, M.D., M.R.C.P.

(*Medical Times and Gazette*, August 5.)

The author admitted that all the uterine tissues were inflamed in super-acute, in acute, and in chronic metritis, and he explained by what signs these three varieties of metritis might be recognized, mentioning that while the acute variety was very rare, the chronic was a disease of frequent occurrence. Dr. Tilt believed that one of the uterine constituents could not be long inflamed without the adjacent tissues becoming more or less diseased, and that in the cases called internal metritis or endometritis, because inflammation of the lining membrane of the womb was their leading pathological condition, there was often a thickening of the uterine walls, to be explained by congestion in most cases, and occasionally by inflammation. In the more chronic stages of internal

¹ Abstract of a Paper read at the Thirty-ninth Annual Meeting of the British Medical Association, at Plymouth.

² Abstract of a Paper read at a Meeting of the Obstetrical Society, July 5.

metritis the uterine walls were said to become thinner, and to be softened by fatty degeneration—a circumstance that should teach caution in the use of the uterine sound. The author discussed the symptoms of internal metritis, and he was thereby led to deny that fundal metritis—that is, inflammation of that portion of the endowomb which lies between the insertion of the Fallopian tubes—had any particular symptoms by which it could be distinguished from ordinary cases of internal metritis. Dr. Tilt asked the Fellows to compare Dr. Routh's uterine inflammation, premising that they would find the same liability to cases of fundal metritis with those he had himself published in his work on metrorrhagia and to purulent discharges capable of becoming intensely acrid, and the same tendency to obstruction to the free exit of the fluid secreted in the body of the womb, the same kind of very acute uterine pain aggravated by any kind of pressure, whether made by the finger or the uterine sound. He reprobated the use of the latter in acute metritis.

ART. 264.—*On a Rare Form of Hemorrhage.*¹

By J. BRAXTON HICKS, M.D., F.R.S.

(*The Lancet*, August 12.)

After quoting the remarks of Dr. Blundell on a form of concealed hemorrhage, caused by the falling down of the membrane, and consequently the retention of blood within the uterus, he brought forward three cases in which, the membranes remaining attached all round the lower portion of the uterus, and blood being effused between the upper part of the uterus and the membranes and margin of the placenta, the membranes and a portion of the placenta were inverted so as ultimately to be driven through the os into the vagina some distance, imitating the bag of membranes in a twin-case after the birth of the first child. The uterus in the meantime became distended with blood, and serious symptoms arose without any sign externally. The treatment was pointed out, and some short remarks made on the mode of expulsion of the placenta.

ART. 265.—*On Chronic Cardiac Disease as a Complication of the Puerperal Condition.*

By Prof. OTTO SPIEGELBERG.

(*Archiv für Gynäkologie*, ii. 2, 1871.)

In this contribution Prof. Spiegelberg closely defines the causes of the prejudicial and sometimes deleterious influence of pregnancy and lying-in on the condition of incompetence of the cardiac valves.

I. The degree of compensation of the cardiac incompetence compatible under ordinary circumstances with a tolerable existence, when subjected to altered and, as in the case of pregnancy, to *suddenly* altered conditions of pressure, is no longer sufficient. The heart is influenced by increased pressure, not in pregnancy alone, but also after delivery; hence the reason that sudden death may result from valvular incompetency *even after the birth* of the child.

In consequence of the insertion of the placental circulation between the arteries and the veins of the uterus, and of the increased amount of blood in pregnancy, the resistance in the aorta and, consequently, the work of the heart, is increased; hence the hypertrophy of the left ventricle in pregnancy.

On expulsion of the placenta, the *aortic pressure sinks*; but, at the same time, the stream of blood in the veins is increased. After delivery more blood is carried by the veins to the thoracic cavity and the lungs; *the work of the right side of the heart is therefore increased.*

II. With insufficiency of the aortic valves, pregnancy, during the second

¹ Abstract of a Paper read at the Thirty ninth Annual Meeting of the British Medical Association, at Plymouth.

stage of which the symptoms are especially severe, is not unfrequently prematurely interrupted. After delivery there is remission of the cardiac symptoms, and sometimes rapid recovery.

III. With insufficiency and simultaneous stenosis of the left auriculo-ventricular ostium, there are three possible conditions:—

1. No disturbing symptoms during pregnancy and delivery. Here the lesion is of old date, and compensation has been established. In delivery the circulation maintains its regularity in consequence of a certain amount of hemorrhage.
2. In consequence of over-distension of the pulmonary vessels, there occur gradually or suddenly in the last months of pregnancy symptoms of disturbed pulmonary circulation. In the former case compensation may take place through hypertrophy of the right ventricle; in the latter case one will observe intense dyspnoea with catarrh or serous effusion into the lungs, general cedema, albuminuria, &c. These symptoms are at their height at the time of birth; afterwards, either they gradually disappear, or the third condition is met with.
3. Threatening symptoms, which, especially in cases of recent mitral disease, have been absent during pregnancy, may make their first appearance soon after birth.

In consequence of the increased pressure in the veins after birth, the right side of the heart is as much oppressed as if there were insufficiency; the right ventricle strives to discharge its blood into the pulmonary arteries. In the pulmonary veins, however, there is also increased pressure; hence there is dyspnoea, pulmonary cedema, deficient decarbonization of blood, &c.

IV. *Treatment.*—In cases of deficiency of the aortic valves digitalis ought not to be given. The author recommends strong purgatives with salines, keeping the patient cool and at rest, and, when the symptoms are severest, free venesection; with deficiency of the mitral valve, digitalis in small doses is indicated; with abnormal distension of the venous system, and with the severe symptoms mentioned above (III. 2), induction of premature labor.

ART. 266.—*Diagnosis of Malignant Disease of the Ovaries.*

By T. GAILLARD THOMAS, M.D.

(*American Journal of Obstetrics*, May, 1871.)

Dr. T. Gaillard Thomas, at a late meeting of the New York Academy of Medicine, read an interesting and very instructive paper on this subject. He classified the most common forms of the disease, based upon the descriptions of some of our most respected modern authors, as, for example, Klob, Farre, Scanzoni, Rokitsansky, Kiwisch, and Courty.

"1. The ovary may be affected by true scirrhus degeneration. This form of cancer is decidedly rare, occurs usually in advanced life, and generally creates a tumor not larger than a large orange. It develops slowly, and presents the physical appearance of scirrhus disease in other organs. It may be a primary malignant development, or it may occur in the ovary secondarily, its primary development having been previously recognized in some other part of the system.

"2. The ovary may be the seat of medullary cancerous deposit, which may originate in the vesicles of Degraaf, in a corpus luteum, as Rokitsansky once saw it do, or in the stroma of the organ. Distension sometimes causes rupture of the tunica albuginea of the ovary, and then exuberant medullary growth develops in contact with the peritoneum and abdominal viscera.

"3. Scirrhus or medullary cancer may alone or united attack the wall of a cyst, and develop either as an endogenous or exogenous production. The cancerous matter so completely invades the cyst-walls in some cases as to make it appear that cystic degeneration had occurred secondarily to its deposit.

"4. From the wall of a cyst, vascular, arborescent villi may project, lining the cavity and, in time, filling and distending it so as to cause the rupture of

its walls. Then the exuberant cancerous element develops and secretes in immediate contact with the peritoneum, and produces either a dangerous peritonitis or abundant abdominal dropsy.

"With this form of cancer colloid degeneration is often associated, when it constitutes that variety which has been described by Cruveilhier as alveolar cancer.

"The mere presence of villous projections from a cyst-wall must not be regarded as necessarily stamping the growth with malignancy, for it is not rare to see benign papillomatous projections arising from such localities. Dr. Peaslee informs me that fifteen or eighteen years ago he removed an ovarian cyst which was thus studded with arborescent villi, which, at the time, he strongly suspected of malignancy. The patient, however not only entirely recovered from the operation, but is living at the present time, never having had any development of kindred degeneration elsewhere.

"The recognition of the fact that the ovarian disease which affects a patient partakes of the character of any one of the forms of cancer just enumerated must ever be a matter of great moment, for upon it must depend not only our prognosis, but the determination to adopt or reject the operation of ovariectomy. If the case be one of malignant disease, operative procedure will accomplish little if any good, while it exposes the unfortunate sufferer to pain, prolonged sickness, and the danger of death."

In the history of five cases of malignant disease of the ovaries, Dr. Thomas draws attention to the prominent symptoms which offer themselves as aids to diagnosis. The circumstances which most prominently point to the development of the disease are:—

"1. The rapid development of a solid tumor in an ovary, with—

"2. Marked depreciation of the strength, vital forces, spirits, and general condition of the patient.

"3. The occurrence of œdema pedum and spanœmia at an early period, is consequently dependent upon a general blood state, and not the consequence of pressure by the tumor.

"4. Lancinating and burning pains through the tumor.

"5. Cachectic appearance.

"6. The occurrence of ascites without evidences of cirrhosis or other hepatic disease, organic disease of the kidneys or heart, or chronic peritonitis, the fluid accumulating in such large amounts as to force aside the supernatant intestines, and produce dulness in place of resonance on percussion in dorsal decubitus.

"Cystic degeneration of the ovary sometimes advances with great rapidity, and is accompanied in its course by rapid emaciation, marked physical prostration, ascites, and a cachectic appearance. It may be asked, whether a case thus complicated would not present the very conditions which have been pointed out in this essay, as furnishing grounds for the diagnosis of malignant disease. Unquestionably it would; but let it be remembered that while these symptoms are mentioned as valuable aids to diagnosis, I do not pretend to maintain that they will always enable the diagnostician to avoid error. Again, in citing ascites with a small tumor as a most important symptom of malignant ovarian disease, I do not allude to slight or even moderate effusion with a large growth, but a markedly disproportionate amount of fluid, a great deal of abdominal effusion with a very small tumor.

"Besides the condition just mentioned, there are two others which may create difficulty in differentiation from ovarian cancer—one is pregnancy in the middle or latter months, complicated by peritoneal effusion; the other, a uterine fibroid existing with cirrhosis of the liver, with the attendant dropsy. The first may generally be known by its characteristic symptoms; while the second, although it might be recognized by the physical and rational signs of uterine fibroids and of cirrhosis, would very likely give considerable trouble in diagnosis.

"When difficult and obscure cases present themselves in which a positive diagnosis becomes impossible by ordinary means, paracentesis or explorative incision should be resorted to rather than that the patient should be deprived

of the prospect for cure held out to her by ovariectomy. Very often the most doubtful case may be satisfactorily settled by evacuating the abdominal effusion, and passing the index finger through a small opening in the peritoneum, so as to touch the morbid growth."

Dr. Emil Noeggerath stated (*Medical Record*, June 1, 1871) that it was difficult to add anything to the paper, as the six cases which came under his observation corroborated all that had been presented, but he would suggest *two* more symptoms in the diagnosis of cancer of the ovary: 1. Infiltration or hardening of the recto-vaginal septum, which had been met with in three instances, and in all of these cases he was convinced at the time of the nature of the disease. 2. Infiltration of the glands of the abdomen, and especially of the omentum. When infiltration of the vesico-vaginal septum existed, there were extensive adhesions of the lower part of the cyst to the pelvic cavity, and these could generally be made out. All of these symptoms mentioned had reference to malignant cancer of the ovary.

(c) CONCERNING THE DISEASES OF CHILDREN.

ART. 267.—*On the Antiphlogistic Treatment of Children.*

By W. C. ROBERTS, M.D., Vice-President of the New York Academy of Medicine.

(*New York Medical Gazette*, April.)

Dr. Roberts commenced his paper by an inquiry into the question whether children require to be treated differently to adults; and he shows that the peculiarities of infant life influence very much the nature of children's diseases, and consequently the therapeutical means required to treat them successfully. He also examined the great question as to the nature of inflammation, and although not pronouncing a dogmatic opinion on the subject, he considers that in all strongly developed acute inflammations there is an excess of fibrin and of colorless lymph-corpuscles in the blood, and that coincidentally there are the symptoms of fever, with a hard pulse instead of a soft one. In order to relieve the inflammatory condition, he thinks that antiphlogistic remedies should be used, of which bleeding is the chief, and that catalytic agents, such as mercury and antimony; sedatives, as opium, veratrina, and aconite; and diaphoretics, are all necessary under certain conditions. In reference to the diseases of children, Dr. Roberts thinks that bloodletting is admissible in the case of well-fed, full-habited subjects attacked with acute phlegmasiæ, and he combats the views of Dr. J. H. Bennett, of Edinburgh, who, as is well known, is opposed to this measure. Dr. Roberts then passes in review the various other antiphlogistic measures applicable to children's diseases, and he declares his confidence in the powers of mercury to arrest inflammation, if not to absorb its products. Like bloodletting, mercury, he says, may be abused, but it is potent alike for good or for evil.

ART. 268.—*On Electricity in Diseases of Children.*

By Dr. ULLERSBERGER, of Paris.

(*Medical Press and Circular*, Nov. 15.)

A prize having been offered by the Editor of the *American Journal of Obstetrics* for an essay on the use of electricity in the treatment of the diseases of children, it was won by Dr. Ullersberger, of Paris, and his elaborate essay, translated by Dr. McLean Hamilton, is appearing in the pages of our valuable contemporary.

The following is an abstract of the prize essay in question:—

The notable advantages of the remedy are:—

- 1st. The patient has little or no fear or aversion to this mode of treatment.
- 2d. It admits of the possibility of modifying the degree of application.

3d. It is impossible to produce the special lesions of the skin.

4th. There are means of applying this remedy on all parts of the body, even to the most inaccessible.

5th. The operation of electrization occupies very little time, is of short duration, and requires but few preparations.

6th. The operation, after being performed, does not leave pain, like the cautery, and all the revulsives of more or less intense effect.

The enumeration of the advantages of electric medication leads us to the question: "What is, then, the general effect of medical electrization?" Its effect is to *invigorate and stimulate those nerves* whose function has been weakened: to calm the irritable or irritated nerves; to compel paralyzed nerves to contract, and restore tetanized nerves. It stimulates or suppresses the glandular secretions; it can change solid matters so as to favor their absorption; and will bring together material for the formation of solid matter—i. e., in checking muscular atrophy, a continuous application of electricity excites contraction of the fibres of cellular and connective tissue; it increases the activity of the lymphatics, causes contraction of the capillaries, and increases the tone of the vessels.

Electricity, when used in medicine, is applied in four different ways:—

1. *By frictional electricity* (rubbing).

2. *By contact* (galvanism). Of the electricity of contact the following currents are used in preference, and to accomplish the following results. (a) An electro-dynamic current, in order to change the action of the nervous system; (b) an electro-chemical, for producing decomposition, reduction, oxidation, precipitation, and coagulation; (c) an electro-thermal, for calorification, cauterizing, and destroying by heat.

3. *By magnetism* (electro-magnetism); and finally—

4. *By electricity*.

The two last modes of inducted electricity (Faradization) can only be employed when the currents intermit to produce shocks, irritation of the nervous system and of the contractile tissues.

The action of the constant current (*dynamic electricity*) on the motor nerves was made known by Remak;¹ previously Nobili, Matteucci, and Eckhardt had observed that a continuous galvanic current which was used for stimulating, rendered a part of a nerve insensible. By this discovery Remak profited, and he used the current to cause contractions for overcoming shortening. A current of 30 elements of Daniel, conducted for several moments through certain contracted muscles, produced a mollification and re-established the will over the flexors. When used in shortening, deviation, contraction of the muscles, and paralysis, great improvement was manifested in a few minutes; in other cases it was of no avail.

The mollification and relaxation of such contractions are now constantly effected. The electric current acts as a stimulant on all the sensory nerves, and is, consequently, applicable in all cases in which stimuli are generally indicated.

The degree and duration of stimulation should be proportioned to the individual susceptibility. In an irritable individual it is necessary to commence with a current of the least intensity and duration. It follows that congestions, inflammations, and feverish affections form contra-indications.

But what then is the effect of the constant current?² It increases the conductivity of the muscle; it is an excitor of the nerves and muscles; it penetrates and agitates, and, as a diffusive stimulant, congests the tissues it traverses.

The general effects are the following:—

1. Increased supply of blood with simultaneous elevation of the temperature of the parts under electric stimulation.

¹ Robert Remak: *Galvanotherapie der Nerven und Muskelkrankheiten*. Berlin, 1858. 8vo.

² Comp. Dr. H. G. Hammer, Director der electrischen Heilanstalt zu Dresden: *Die Electricität als fortlaufende bildende und erhaltende Kraft*. Dresden, 1855. 8vo.

2. Increased energy of the contractile power of the walls of the vessels.
 3. The electric current prevents and overcomes these changes, secondary and consecutive, which are manifested by inactivity of the nervous and muscular radii.

4. It re-establishes the lost or suspended power of the nerves, and it consequently stimulates innervation.

5. It is capable of provoking supplementary activity in the non-paralyzed nerves. We can use the electric current as an excitor of muscular power in paralytic affections.

It is precisely in such cases that it has been heretofore employed, as also in cases of anæsthesia or lost sensibility.

Electric stimulation is capable of restoring, under certain conditions, the vital energy of the motor nerves and muscles, when weakened or entirely suspended. It can regulate or effect material transformation in the parts mentioned.

Electricity exerts a special effect on the systems of locomotion and nutrition; it exerts a reflex compensation.

Stimulated innervation can produce absolutely the same physiological phenomena as electrization—that is to say, elevation of temperature; acceleration of pulse; division of fluids; increase of the secretions and excretions; congestion of the skin and contraction of the muscles.

METHODS OF THERAPEUTICAL ELECTRIZATION.

Medical electricity comprises static electricity, electricity by contact, electric bath, electric spark, discharge by the Leyden jar, electric blowing, electricity by the brush or the pincers. Electrization by these modes is very rarely employed. The dynamic, which is divided into:—

1. Electricity by contact (galvanism), subdivided into (a) continuous current, (b) an intermitting current.

2. Inducted electricity (Faradization), thus called by Duchenne of Boulogne, after the name of the inventor.

They take their source either from a galvanic column (apparatus of Volta, electric or electro-dynamic) or by magnetism (rotatory magnetico-electric apparatus).

METHODS OF LOCALIZED ELECTRIZATION, LOCALIZED FARADIZATION.

1. Electric irritation of the skin. We Faradize the skin, (a) by means of the electric hand, (b) by means of the metallic excitors, (c) by means of the electric wires, electric flagellation, or on a single point the electric moxa.

2. Electric irritation of the muscles, muscular Faradization, which is direct, or indirect Faradization of a nerve or muscle in the normal state, produces always a contraction, or sensation. The indirect presupposes an exact knowledge of the position and direction of the nerves. The muscular consists in that each individual muscle is contracted; we become aware of this when we place the damp electrode over the parts of the skin which correspond to the surface of the muscle. Electricity under the influence of very strong currents can penetrate deeply in the tissues.

3. Faradization of the internal organs—the organs of sense; the genital parts of man; the rectum; the anus; the pharynx; the œsophagus; the bladder; the larynx. The Faradization of these parts requires special instruments.

Faradization of the stomach, lungs, or heart is only effected by the indirect Faradization of the pneumogastric. Faradization, applied to the treatment of disease, should be applied every day, or every other day. It is not well to prolong the *séances* more than 10 or 15 minutes. We apply it in centrifugal or centripetal currents, or by irritating the peripheral ends of the nerves by the electric currents.

Localized electrization consists then in this: that the effect of the electric current is confined to the skin, a branch of a nerve, or a nerve-fibre, a single muscular fasciculus, or finally to the internal organs, by irritating directly or indirectly their nerves. These operations do not injure the skin, and we use in their performance wet or dry metallic excitors (sponges in metallic cylinder).

In one instance the dry metallic excitators only produce on the skin an irritation limited to it; in the other, the wet excitators, applied to the wet skin, cause the electric currents to penetrate the skin without irritating it, and diffuses them through the organs immediately beneath.

We have, as established galvano-therapeutical rules, the following:—

1. The descending extra-polar electronus should be in preference employed, when it is desirable to restore a pathological excitability, an anomaly of irritability, around the peripheries of the nerves, to their normal state.

2. The extra-polar catelectronus, on the contrary, should be used where lowered excitability or diminished excitation exists at the periphery of the nerves—that is to say, the muscles that are to be restored.

3. The indication for the production of the anelectronus and of a localized ascending catelectronus, should start absolutely from the same point of view. The electronus is in general contra-indicated in increased excitability, while the other, the catelectronus, is contra-indicated in diminution of excitability in the central part of the nerves—in the central spinal ramifications and the roots of origin of the nervous fibres.

We have characterized the therapeutical value of the currents of tension “die spannungströme” in the following manner:—

1. They are able to render the same service as the Faradaic currents.

2. Against complete paralysis of sensation of the integument; the currents of tension separated a certain distance from the skin, operate with much more force than the Faradaic and constant currents applied by means of the electric flagellation.

3. It is, without dispute, the energetic effect of the immediate currents of tension directed over the flat muscles and vessels of the skin which dissipate the passive hyperæmias and puffy swellings of the skin which are secondary in the aforesaid paralysis.

In 1867 Dr. Joseph Dropsy, of Cracow, presented to the International Medical Congress a memoir on generalized electricity, founded on new processes, from which we take the essential points.

It is necessary, in treating diseases of the centrifugal function, to apply positive electricity to the top of the head and to the pit of the stomach, and negative electricity to the hands and feet. It is necessary, in treating diseases of the centripetal function, to use negative electricity to the top of the head and to the pit of the stomach, and positive electricity to the hands and feet.

1. The sensitive nerves can only respond to effects to which they are forced through their physiological nature.

2. The motor nerves will contract or retract.

3. The trophic nerves will only serve the purpose of nutrition, and the transformation of organic and organized substances. They will lend themselves to the processes of secretion and excretion.

We have stated in our general rules of electro-therapeutics, that the causes of the affections submitted to electrization must never be lost sight of, and as diseases of motility are the most frequent, we will examine the etiology of the disorders of motility without paralysis. It can be produced (a) by alteration of the sensibility; (b) by derangement of the equilibrium of the antagonistic muscular parts; (c) by suspension of the localized power of movement; (d) by a disproportion between normal impulse of will and excitability, as well as the conducting capacity of the different parts of the nervous system; (e) by general disturbance of the cerebral functions without total suspension of the last.

1. The antispastic effects of the constant galvanic current manifest themselves visibly, (a) against the reflex spasms—i. e., *celepharospasmus*; (b) against trembling of the limbs; (c) against paralysis agitans; (d) against *mystagamas* (coma-vigil; (e) against stuttering; (f) against chorea.

2. The anti-paralytic effects are seen (a) against partial secondary paralysis, and atrophy, with or without contractions, as the sequelæ of articular or muscular rheumatism; (b) against primary and secondary atrophies of the muscles, “*das premierstades*,” (c) against traumatic paralysis; (d) against hemiplegia; (e) against paraplegia, and *tabes dorsalis*.

3. The catalytic effects of the constant galvanic current are seen: (1) by di-

lation of the vessels which contain blood, and of the lymphatics which clear the cells of blood, or of stagnant lymph, then by reabsorption of effusions, establishing a circulation of fluids in the interior of the tissues; (2) by a chemo-electrolytic change, joined to an electro-dynamic removal of the fluids; (3) by diminution of pain after lesions and traumatic inflammations.

We may thus rely on these catalytic effects.

(1) Against phlegmon of the joints, either acute, traumatic, or chronic; (a) against chronic articular or muscular rheumatism of the tendons, of the sheaths or periostitis; (b) against neuralgia; (c) against deep-seated inflammations of the spinal cord, the consequences of which are paralysis of the lower extremities, of the urinary organs, and of the rectum; (d) against deep-seated inflammations of the brain, accompanied by trembling and other spasmodic paroxysms. (2) Against exudations (hydrarthrosis). (3) Against painful and inflamed tumors.

The continuous currents, operating rapidly or slowly, then the interruptions, rapid or slow, of the successive currents, produce different effects, consequently a complete apparatus should be constructed in order that the current may operate by shocks which succeed each other rapidly or slowly; the effect of the rapid discharges of the current on the muscular contractility of the muscles is condensed in the inducted current, and is relaxed very soon after the suspension.

In this last case, the less rapidly the discharges follow each other, and the shocks produced by the suspensions diminish, the more rapidly the separate discharges follow. The muscular sensibility is more powerfully stimulated by rapid discharges of the current than by interruptions which slowly follow each other. The muscular tone is increased by the rapid discharge of the current as soon as it is diminished, and returns to its normal state; a prolonged influence of the current can even produce contraction of the muscle.

The nourishment of the muscles is more active under the influence of currents rapidly discharged, which may be observed in atrophies.

The electro-cutaneous sensibility is much more stimulated by a strong current rapidly discharged than by a slowly interrupted current.

ART. 269.—*On the Differential Diagnosis of Rickets and Chronic Hydrocephalus.*

By Prof. WIDERHOFFER, of Vienna.

(*Gazette Médicale de Paris*, No. 27, 1871.)

In rickets the form of the head is more or less angular, but there is a characteristic disproportion between the face and the head. The anterior fontanelle may be large, but the sagittal suture is closed at the eighth or ninth month; the orbits are normal; the cornea is not prominent. Later there are certain changes in other parts of the skeleton, as the rachitic distortion of the ribs, the transverse flattening of the chest, and enlargement of the lower epiphyses of the radius and ulna.

In chronic hydrocephalus, on the other hand, there is a tendency for the head to take a globular form, the sagittal suture is open and also the posterior fontanelle. The temporal bones, instead of maintaining a vertical position, are at their superior parts forced outwards. In consequence of intra-cranial pressure, the roof of the orbit is pushed downwards so as to force the eyeball forwards, which gives a somewhat wild appearance to the countenance. At a late period of hydrocephalus there is a tendency to general convulsions, in rickets to partial convulsions. The former malady is frequently accompanied by constipation, the latter by diarrhoea.

ART. 270.—*Diagnosis of Mucous Disease.*¹

By EUSTACE SMITH, M.D.

Under the title of mucous disease the author describes a malady characterized by an increased secretion of mucus from the alimentary canal, which interferes with the digestion and absorption of food. In this disease the child loses flesh, color, and spirits, and tubercle is often suspected without cause to exist. The appearance of the tongue is peculiar—it has a glossy, slimy look, as if it had been brushed over with a solution of gum, an appearance which is owing to excessive secretion of the glands of the mouth. The fungiform papillæ at the sides of the dorsum are also unusually distinct. The diagnosis of this affection is given as follows:—

Diagnosis.—The symptoms of this derangement present a remarkable resemblance to those of chronic tuberculosis, with which it is so often confounded. The distinguishing points between the two diseases are therefore of much importance.” The most characteristic symptoms of mucous disease are the slimy appearance of the tongue; the large quantities of free mucus in the stools; the great want of regularity in the progression of the symptoms; and the periodical occurrence of bilious attacks. If these conditions are observed to follow an attack of whooping-cough, or to occur at the time of the second dentition, if they are accompanied by dry, rough skin and sallow complexion, and if the temperature of the body is not raised above the natural level, we may conclude that the illness is due to the cause which has been described.

“With regard to the heat of the body it must be remembered that a continued elevation of temperature is necessary to demonstrate the existence of tuberculosis. In mucous diseases the temperature may be elevated temporarily by passing sources of irritation, and thus may be found to be high on two or three successive days. In these cases, therefore, some caution should be exercised in making a diagnosis, and further observations will be necessary before we can feel ourselves justified in giving a positive opinion upon the nature of the disease.” Cases, however, of this derangement occur in which the temperature rises and remains elevated, perhaps permanently, although the symptoms in other respects correspond to those of mucous disease.

“Pneumonia is very apt to attack such patients, and it is not at all uncommon for the deposit remaining entirely or partially unabsorbed to undergo cheesy transformation, and form the so-called scrofulous pneumonia; one of the many varieties of pulmonary phthisis. In such cases it is often a very nice point to decide upon the presence or absence of gray tubercle, but by careful consideration of the history of the acute attack, and by minute observation of the seat and progress of the physical signs, a diagnosis can be generally arrived at. If the formation of gray tubercle occur at all in such cases, the coincidence must be looked upon as accidental, for mucous disease is quite distinct from the tuberculous diathesis and independent of it.”

ART. 271.—*Diagnosis of Organic Disease of the Brain in Childhood.*²

By CHARLES WEST, M.D., F.R.C.P.

On the subject of the differential diagnosis of functional from organic disease of the brain in childhood, Dr. West gives the following suggestions:—

“It is most difficult to lay down rules for the avoidance of error, for while it is undoubtedly true that neuralgia may follow either on some previous ill-defined feverish attack, or may take place during convalescence from typhoid fever, it is just in such conditions that real disease of the brain oftenest comes on;

¹ On the Wasting Diseases of Infants and Children. 2d edition, revised and enlarged. London: James Walton.

² Disorders of the Nervous System in Childhood. Longmans. 1871.

and the latter is of far more frequent occurrence than the former. It may, however, be of some use to bear in mind that neuralgia pain is localized in some part of the head; that while it is very intense, and accompanied with excessive intolerance of light and sound, it is also often attended with weeping, and the importance of tears as disproving the existence of real inflammatory disease either in the head or chest, first dwelt on by Trousseau, cannot be overrated. The intervals between the paroxysms are at times not only of perfect ease, but of cheerfulness; sickness is absent, the power of taking food is not lost, and sleep, if not interrupted by pain, is quiet and refreshing. Moreover, there is no dizziness, though there may be heat of head; the pulse is unusually quick and feeble, and, I must add, may be irregular or actually intermittent, for while as a general rule irregularity of the pulse is one of the least invariable symptoms of disease of the brain, there are some children with whom any disorder of the nervous system, especially such as is sympathetic with disturbance of the digestive organs, is invariably attended with irregularity of the heart's action.

"Pain dependent on real cerebral disease is rarely limited to one part of the head; or if it be, it is referred to the forehead. It is generally, though not invariably, less intense, the intermissions of suffering are less complete, and some one symptom almost always attends the pain: it may be sickness or obstinate constipation, or dislike of light or sound, even when the pain abates—some one symptom, small in itself, but enough to keep alive the anxiety of any one who subscribes to Morgagni's saying, that 'the habit of observation is the foundation of the art of medicine.'"

ART. 272.—On Effusions of Blood in the Brain and its Membranes in Children.

By Prof. W. A. HAUNER, of Munich.

(*Journal für Kinderkrankheiten*, 1, 2, 1871.)

In concluding the report of a case of traumatic extravasation of blood under the arachnoid and in the brain-substance itself in a boy aged nine months, Prof. Hauner gives the results of his own observations of this subject. He deals with the reports of eleven cases of cerebral hemorrhage in children, three of whom were newly born and whose delivery had been attended with much difficulty.

Prof. Hauner asserts that cerebral hemorrhages occur in young children with much greater frequency than is generally supposed; it happens that one very frequently diagnoses other cerebral lesions which seem to be more conformable to experience than cerebral apoplexy.

Intermeningeal effusion of blood in the pia mater or in the arachnoid sac is observed more frequently than hemorrhage into the brain itself.

Effusion of blood into the pia mater generally affects the base of the brain, and with especial frequency the posterior lobes (from laceration of the vessels during delivery). Hemorrhage in the pia mater, on the convexity of the cerebral lobes, and at the margins of the cerebellum, is generally the result of intense hyperæmia, meningitis, or encephalitis.

Effusion of blood in the arachnoid membrane rarely occurs in infants. When it does occur, the effusion is generally extensive, and the danger, therefore, very great. It is generally met with over the lateral parts of the convexity of the cerebral hemispheres.

The symptoms of apoplexy of the brain and its membranes are generally difficult to determine, except there be considerable effusion into the arachnoid sac. Distension and strong pulsation of the greater fontanelle, when this is open, a hot head, convulsive twitch of the face, rolling of the eyeballs, convulsions and cramps of both extremities on one side, or of one hand and one foot, paralysis of the lower extremity, a bluish or yellowish coloration of the skin, great diminution of temperature, slow pulse, and deep and slow respiration, are symptoms which have been often observed. Vomiting and constipation, which are such valuable symptoms in adults, may often fail here.

The age of the child, the nature of the delivery, the previous history, careful observation of the constitution of the patient, and the presence or absence of pyæmic or dyscrasic conditions, will assist the diagnosis.

Hennig, Barrier, and Bednar lay down the following as the causes of intermeningeal hemorrhages:—

1. Hyperæmia, or inflammation of the meninges.
2. Decomposition of the blood after hyperæmia of the meninges.
3. Mechanical obstruction to the circulation, most commonly trismus and tetanus; sometimes enlarged thymus, cardiac disease, tuberculosis of the bronchial glands.

Any constitution of the body is compatible with the occurrence of intermeningeal bleeding; the frequency of this lesion, however, is lessened with the advancing age of children. Its duration is extremely variable.

The treatment is casual, and should vary according to the age and constitution of the child and the complications. The best remedies are, bleeding, either from the umbilical veins or by the application of leeches, the application of moderate cold, the administration of wine, iron and quinine. In some cases warm aromatic baths do good.

Effusion of blood into the cerebral substance (apoplexia cerebri) occurs most frequently in newly-born children in the form of capillary apoplexy, and is met with more especially in pyæmic and septic conditions. Sometimes an apoplectic deposit as met with in adults is found.

In these cases the diagnosis is very difficult, and, when there are small extravasations, impossible. Larger deposits are associated with grave complications; gangrene of the umbilical cord, with consecutive peritonitis, origin of the aorta from the right side, and of the pulmonary artery from the left side of the heart, hypertrophy of the liver and spleen. The immediate causes of laceration of the small cerebral vessels are, an injury during delivery and encephalitis. The remote causes are very numerous.

Thrombosis of the cerebral sinus, which may occur in connection with caries of the petrous bone, after injuries of the skull, and after cervical abscess, may, according to Gerhardt, occur during the first week of life, although it is rarely met with in the first six months. It is generally the result of weak heart with thickening of the blood, or of weak respiration (atelectasis). Overlapping of the cranial bones under conditions of exhaustion is not the direct cause of thrombosis of a sinus. The sinuses generally affected are the transverse and the straight, rarely the superior and inferior longitudinal, and still more rarely the petrosal, cavernous, and circular sinuses. A plug in the transverse sinus may extend into the internal jugular vein. The results of this kind of thrombosis are, arrest of the blood current in the cerebral veins, hyperæmia, serous soaking of the brain, cerebral hemorrhage, embolism of the pulmonary artery.

The diagnosis is difficult; vomiting commencing suddenly and becoming very severe may arouse suspicion.

The termination is always fatal. The duration varies very much, the patient generally lasts for only a few days. The treatment, therefore, should be directed to prophylaxis, and the relief of symptoms. Suckling infants affected with general depression and vomiting should be treated at once by stimulants, baths, wine, musk, ether, cold applications to the head, stimulating clysters, and mustard poultices to the feet and abdomen.

ART. 273.—*Treatment of Chronic Diarrhœa.*¹

By EUSTACE SMITH, M.D.

In the chapter on chronic diarrhœa, the following plan of treatment is recommended in obstinate cases:—

“All food must be stopped, and the child must be nourished in the follow-

¹ On the Wasting Diseases of Infants and Children. 2d edition, revised and enlarged. London: James Walton.

ing way : A piece of raw mutton, or rump steak, free from gristle or fat, is finely minced, and is pounded in a mortar till it is converted into a pulp. The pulp is then strained through a fine sieve or a piece of muslin, to remove the bloodvessels and cellular tissue. Of the meat so prepared, a teaspoonful is given at regular intervals four times in the day, and every day the quantity administered is gradually increased, until half a pound is taken each day in divided doses. During this treatment, *no other food of any kind must be allowed*, and no fluid but thin barley-water, or a drink made by mixing the un-boiled whites of three eggs in a pint of water, sweetening it, and flavoring with a little orange-flower water. This diet usually causes the motions to have an intensely offensive smell; but this is of no consequence, and the parents should be warned of its liability to occur. The patients themselves often like this food, and take it eagerly. If, however, as may happen, they show any repugnance to it, the pulp may be sweetened with white sugar, or a little confection of roses may be added to make it more palatable, or it may be given in a small quantity of veal-broth. As medicine, we must give at the same time the bismuth and chalk mixture, with the addition of one drop of tinct. opii to each dose."

APPENDIX.

ART. 1.—*The Treatment and Utilization of Sewage.*¹

By W. H. CORFIELD, M.A., M.B. Oxon., M.R.C.P. London; Professor of Hygiene and Public Health at University College, London; &c.

In this admirable work, which we look upon as the most complete treatise on the subject in the English language, Professor Corfield reviews the most important methods that have been practised for the removal of refuse matters from towns, and is led to adopt the following definite principle: "that the method which does, in practice, where it is anything like efficiently carried out, remove at once and completely from the vicinity of habitations the various sorts of refuse in the most expeditious manner, is the one which must be the most conducive to health." Dr. Corfield points out that the principle of all dry methods of excremental removal, without exception, is to leave the excremental matters in and about the house for a certain time—so long, in fact, as they do not become an absolute nuisance. It is maintained that this is essentially wrong in principle, and the author points in support of his opinion to the facts with regard to the state of the health of the inhabitants of midden-closet towns. Many instances more than those quoted by Dr. Corfield are daily coming under his notice. As to the dry earth system, its principle is the same, though its action is more thorough. Although it has been shown to have a great advantage where it has replaced midden-heaps and cesspools, the author maintains with Dr. Rolleston and with Dr. Parkes that it has not been shown that the compost is disinfected as well as deodorized, and until this is proved to be the case it is safer to resort even to the offensive pail-system, where excrement cannot be allowed to remain within dwellings for any length of time on account of the great nuisance that would be caused by it, than to a plan which destroys the warning, but is not proved to have removed at the same time the danger. "It has at various times been proposed to deodorize coal-gas; the result of this would certainly be that accidents by poisoning and by explosion would be increased to an enormous extent. We know that the poisonous ingredient *par excellence* of coal-gas—the carbonic oxide—is perfectly inodorous; we also know that the emanations which produce typhoid fever are not offensive or disagreeable to the smell, and it is a *presumption*, as Dr. Parkes says, to suppose that all danger of their production is removed by mixing the excrement with earth. But even were this presumption to become a demonstrated fact, the greatest objection to the earth-system (one which is essential to it because it is a dry system) would still be as strong as ever—viz., that whenever the earth supplied happened to be in too small quantity, too moist, or of bad quality, or the air to be very damp, or the compost wetted through carelessness or otherwise, the danger of infection would at once arise. How frequently one or more of these conditions would be fulfilled need hardly be pointed out. Miss Nightingale well says, in her remarks on the *Progress Reports* in the Indian Sanitary Report (1870), p. 45: 'The true key to sanitary progress in cities is, water supply and sewerage. No city can be purified sufficiently by mere hand-labor in fetching and carrying. As civilization has advanced, people have always enlisted neutral forces or machinery to supplant hand-labor, as being much less costly, and greatly more efficient.'

"We turn, then," Dr. Corfield writes, "to review briefly the results already attained by the water-carriage system, despite all the disadvantages of it (when

¹ A Digest of Facts relating to the Treatment and Utilization of Sewage. 2d edition, corrected and enlarged. Macmillan & Co.: London and New York. 1871.

badly carried out) which have been put forward in these pages. We know what it has done: we know that in the towns where it has been introduced in conjunction with other sanitary improvements, it has been the means of practically annihilating cholera; we know that it has been very little less effectual in the extermination of typhoid fever. We are sure that it is the speedy removal of refuse matters that has accomplished this, because, in towns where free exit has not been allowed for the sewage from the sewers, the death-rate of typhoid fever has only very slightly diminished, or has slightly increased, or even (in one case) has very considerably increased. Such cases, although deplorable in themselves, are instructive to the sanitarian in pointing out beyond the question of a doubt, that it is especially the improved sewerage arrangements that have effected these results. We have seen, too, that by the construction of deep drain-sewers, the mortality from phthisis has been diminished to a very remarkable extent, amounting in one case to nearly half the former number of deaths. And although we have, for a multiplicity of reasons, felt ourselves justified in condemning the drain-sewer system, we have certainly to thank it for the discovery of the all-important fact that one of the most potent causes of phthisis is a water-logged subsoil; so that while we advocate impervious pipe-sewers, we must also insist that towns shall be provided with deep subsoil drains. Not only this, but we have also seen that these special improvements have been accompanied by the still more important one of a reduction in the general death-rate, amounting to about a fifth part of the previous number of deaths in nine out of the twenty-five towns reported on by Dr. Buchanan. Having then the sewage to deal with, the first object must be to get rid of it in an unobjectionable manner, and the next, to utilize it if possible. Plenty of evidence has been given to show that it must not be sent into the rivers, as has heretofore been almost invariably done; and that it is only a little less objectionable to resort to this plan after a preliminary straining off of the suspended matters. We have, however, seen that by intermittent downward filtration through soil (and perhaps, where convenient, through ashes, &c.), sewage can be adequately purified, so that the effluent water may be turned into a stream; by this plan, however, the manure which is so much wanted is almost entirely lost, the greater part of it escaping in solution in the effluent water in the form of nitrates and nitrites. As to the utilization of sewage, we have shown the futility of all attempts at precipitation of its valuable constituents; in fact, 'it is hopeless,' as Dr. Hewlett says, 'by either one or any of these operations to render the effluent water anything else than sewage.' Finally, with regard to irrigation farming, the facts that we have brought together seem to us to show clearly that it satisfies the three conditions which we laid down (p. 227); the sewage is purified, a profitable agricultural return is insured, and the health of the neighborhood is not endangered. We are then reduced to the following issue: wherever it is possible, irrigation should be carried out, the sewage having been previously freed, by one or other of the methods described, from the offensive suspended matters, which must be deodorized to prevent the production of a serious nuisance. Wherever, on the other hand, irrigation is practically impossible, intermittent downward filtration through soil or other suitable material, affords the means of satisfactorily purifying the sewage. We have collected the facts, arranged them, and weighed the evidence afforded by them; it is for the future to decide how far our conclusions have been warranted."

We commend Professor Corfield's well-executed and exhaustive work to our readers.

ART. 2.—*On the Action of Pain on Digestion and Nutrition.*

By P. MANTEGAZZA.

(*Gazetta Medica Italiana di Milano*, 1870; *Gazette Hebdomadaire*, No. 39, 1871.)

Numerous experiments have been made in the laboratory of experimental pathology at Pavia on one of the important phenomena produced by traumatic lesions, and to which are attributed various effects; it is known, in fact, that pain

has been invoked as one of the causes of elevation of temperature. Previous experiments by Mantegazza proved, however, that pain really produced a lowering of the temperature, and more recent researches have confirmed this view.

Pain disturbs digestion in various ways; it diminishes the appetite and induces gastralgic or dyspeptic affections, with arrest of the gastric digestion, and with the occurrence of vomiting or diarrhoea. It may be demonstrated experimentally that pain weakens the gastric digestion in batrachians as well as in mammals. In the superior animals prolonged pain produces as ultimate effects debility and emaciation. In the frog, during winter, even when alimentation cannot be disturbed by the effects of pain, prolonged pain causes the absorption of a much larger quantity of water, so that the animal may be affected with a saturation analogous to that of cadaveric imbibition. This absorption is in direct relation to the force lost by the animal, and to the approach of the agony, but the kind of death seems to exercise no influence on the absorption of water which takes place after death. This imbibition in the frog is so regular that it might serve as a measure for appreciating during winter the state of feebleness of the animal, or the approach of death. The more grave indirect effects of pain on general nutrition consist in a greater vulnerability of the organism, and a more ready soil is prepared for the reception of all acquired or hereditary pathological germs. It is probable, though it has not been demonstrated, that pain, besides weakening the organism by a diminution of the digestive and assimilative processes, may alter the composition of the blood by determining the addition of products of a pathological digestion, these products representing the ferments of an early affection.

In the nerves of membranes subjected to prolonged painful irritation, may be found after death histological lesions, which seem to be very probably due to the mechanical injury which has produced the pain. In the central parts of the spinal cord one cannot recognize any precise changes in structure even after pain has existed during almost a month.

Severe traumatic lesions seem to be less dangerous to nutrition and life when pain has been prevented by the use of chloroform.

ART. 3.—*On the Applications of the Endoscope.*

By M. E. LABARRAQUE.

(*Bulletin de Thérapeutique; Gazette Hebdomadaire*, No. 19, 1871.)

This memoir is intended to supply some clinical examples of the advantages of endoscopic inspection in affections of the urethra, prostate, bladder, rectum, uterus, and nasal fossæ. The author does not give new views, but fresh facts.

In the *urethra* the endoscope offers daily opportunities of establishing on the living subject the precise seat and the anatomical characters of chronic gonorrhoea. With this instrument one may make out in the bulbous and membranous portions of the urethra ulcerations with granulating surfaces from two to four centimetres in length, and liable to bleed at the least contact. The endoscope permits us to apply caustic directly to the affected part, and to this part only; this is preferable to that other proceeding, still very advantageous, which consists in applying caustic to the seat of the affection by means of a small sound, perforated at its extremity.

The author describes the existence of certain urethral ulcerations which are dependent upon the influences of the seasons, and connected with the herpetic diathesis. These ulcerations, scattered along the whole length of the urethral canal, are depressed and not prominent, and, like the preceding forms of ulceration, are granular. These soon disappear on the application of oil of cade.

The endoscope enables us to distinguish dilatable structures from those which are caused by an inodular tissue which appears under the form of a white or yellowish-gray cicatrix. This instrument assists also the discovery of the internal orifice of a fistula. It has served in one case to prove the existence

of a lesion, the reality of which had been doubted by many authorities—urethral polypus. The following is the case, which was reported by M. Labarraque:—

Joseph E., thirty-four years of age, was admitted into the Necker Hospital on May 24th, 1870. He asserted he had never had any venereal disease. About a year and a half before his admission, after drinking excessively, he had a slight attack of urethritis, which was rapidly cured by copaiba and turpentine, associated with injections of red-wine. Since then he had noticed a diminution in the size of his stream of water. He complained of frequent irresistible desire to pass urine. Micturition was performed without difficulty, but after the act he felt severe scalding in the glans, which lasted for two or three minutes.

He had never suffered from retention of urine.

It was thought at first that this was a case of ulceration in the urethral canal, with contraction of its calibre, and for some time the organ was being accustomed to the passage of instruments. Subsequently an endoscopic examination revealed the presence of a rounded urethral polypus, of the size of a grain of corn, situated in front of the membranous portion, and inserted into the superior wall of the urethra. This polypus was very movable; its pedicle was soft; it was rosy in color, which did not differ from that of the rest of the canal. There seemed to be no pronounced vascularity.

On June 17th the tumor was removed. The endoscope was passed as far as the seat of the growth and permitted its pedicle to be enclosed within a filiform knot, by means of which the small excrescence was withdrawn without any hemorrhage. From this time the condition of the patient improved. On June 27th an endoscopic examination showed merely some slight ulceration in the prostatic region behind the seat of insertion of the polypus. The ulcer was cauterized with nitrate of silver. A histological analysis of the growth showed that it belonged to the class of papillomata.

Finally, the endoscope, when used with the straight sound, enables one to see in the prostatic portion of the urethra, in addition to gonorrhœal and hepatic ulcerations, scrofulous and cancerous affections, the latter being always associated with cancer of the bladder. By means of curved catheters, furnished with a piece of transparent glass, which permits one to see into the bladder, one may succeed in recognizing and even in measuring the tumor which projects into the bladder, when the prostate is hypertrophied.

The *bladder*, before being examined with the endoscope, ought to be emptied, and then washed out with water. By means of the endoscope one may see about a half of the internal surface of the organ—that is to say, the neck, the trigone, and the bas-fond, as far as the summit. By an examination of this kind may be made out in chlorotic and anæmic subjects the participation in the general pallor of the mucous membrane of the bladder; in hæmaturic patients, dilatation of the capillaries, varices of the neck, and sometimes small ecchymoses; and, in cases of chronic cystitis (pain renders endoscopic examination very difficult in cases of acute cystitis), injection, softening, ulceration of the mucous membrane, deposits of membraniform or purulent products, and hypertrophy of the muscular columns. One may thus conceive the advantages likely to be derived from the use of the endoscope in the diagnosis of vesical calculi and tumors. With regard to the former, the author dwells upon the advantages to be derived from the endoscope in determining whether the calculus is or is not encysted.

Finally, one may readily conceive of the results attending the endoscopic examination of the rectum, uterus, nasal fossæ, and œsophagus. With regard to the uterus, M. Desormeaux has studied with much care the cavity of the cervix, that of the body presenting, as may be imagined, especial difficulties. It is doubtful whether the œsophagus can be freely inspected by the aid of the endoscope. The author doubts whether any view can be obtained of the interior of the stomach, although Kussmaul asserts that he has with the endoscope penetrated into this cavity.

Exploration of deep-seated cavities with the endoscope is not an absolutely harmless proceeding. Slight inflammation and some fever occasionally result from its use, especially in examination of the deep parts of the urethra. The

essential point is to adapt the size and form of the instrument to the extent and arrangement of the parts about to be explored. In most instances the examination is followed by no appreciable bad symptoms.

ART. 4.—On the Utility of Preserving Periosteum in Cases of Excision.

By M. A. H. SHÖEMAKER.

(*Nederlandsch Tijdschrift*, v. 11, 1869; *Schmidt's Jahrbücher*, No. 4, 1871.)

1. The periosteum possesses a bone-producing property which is not lost even when the membrane is partly infiltrated with pus and covered by granulations.

2. After resection of a joint, the new formation of bone tissue proceeds from the periosteum as well as from the bone.

3. The new formation of normal bone tissue only occurs when the parts are kept at absolute rest during the process of healing.

4. The bone formation may proceed directly from the newly-formed vessels and the connective tissue, or take place in the intermediate tissue of the fibro-cartilage.

5. After resection of a joint with preservation of the synovial membrane, a fibrous tissue grows from this latter structure, which binds the ends of the bones together, permitting at the same time more or less mobility.

ART. 5.—On Abnormal Forms of Retinitis Pigmentosa.

By M. LEBER, M.D.

(*Archiv für Ophthalmologie*, xvii. 1, 1871; *Schmidt's Jahrbücher*, No. 8, 1871.)

The typical form of pigmentary retinitis is characterized—pigmentation of the retina itself being excluded—by a regular chronic course, by contraction of the peripheral field of vision with normal central vision, by weakness of sight in twilight, and by its frequent connection with heredity, and consanguinity of the patient's parents.

Very little is known concerning the pathological anatomy of this affection. It is even difficult to distinguish it from choroiditis with deposit of pigment in the retina.

The deviations from the typical forms of pigmentary retinitis may be arranged in the following groups:—

1. (a) Cases in which, though the visual disturbance is quite analogous to that of the typical form, pigmentation of the retina is absent. This is the so-called chronic torpor of the retina, which is present without any morbid condition of the eyeball, and at first without contraction of the field of vision. It is probably due to hypertrophy of the neuroglia with atrophy of the nerve elements.
- (b) Cases in which disseminated pigment deposit in the retina is associated with atrophic patches in the choroid. The visual disturbance is typical.
2. Cases in which, whilst the ocular appearances are typical of pigmentary retinitis, the visual disturbance is abnormal:—
 - (a) The sharpness of central vision is affected; fixation becomes gradually eccentric, and nystagmus takes place. In these cases there is generally a history of heredity or consanguinity of parents.
 - (b) The gradual diminution of the visual field may not be strictly concentric; annular defects may be formed. Hemeralopia may not occur, and nyctalopia may be present.
3. Cases in which both the ophthalmoscopic appearances and the visual disturbances are abnormal:—
 - (a) The amaurosis is generally complete and congenital. The pigmentation of the retina may, however, make its first appearance in the first year of life. These cases are characterized by nystagmus. Consanguinity of parents and a similar affection in several children are frequently observed.

- (b) The amblyopia is central, and *not* congenital; the pigmentation is either quite wanting, or is slightly developed at a late period. Occasionally small clear patches may be observed in the choroid, near the periphery of the fundus of the eye.
- (c) The disturbance of vision is atypical. In addition to the pigmentation of the retina, considerable lesions exist in the choroid.
4. Finally, there are cases in which the development of the disease is irregular in the two eyes, and its course is either unusually slow or unusually rapid.

ART. 6.—On Sub-hyoid Pharyngotomy.

By B. VON LANGENBECK.

(*Berliner klinische Wochenschrift*, vii. 2, 3, 1870; *Schmidt's Jahrbücher*, No. 8, 1871.)

This operation was first described by Malgaigne in 1835, but was not performed on the living subject either by this surgeon or by Vidal, who lays claim to the priority. Since in this operation the pharynx only is opened, the above title seems to be more appropriate than Malgaigne's "sub-hyoid laryngotomy," or Vidal's "sub-laryngeal proceeding."

The operation should always be preceded by a prophylactic tracheotomy, after the performance of which, and the fixing of a strong canula in the air-tube, an incision about five or six centimetres in length is made parallel to the lower margin of the hyoid bone; the strong thyro-hyoid membrane is then divided, the elastic fibres being taken up by two forceps, and the knife carried between these so as to cut through the membrane. The pharyngeal mucous membrane having been cut through, the epiglottis is now exposed; this is then drawn out of the wound by a strabismus-hook or by hooked forceps. After complete division of the thyro-hyoid membrane, the larynx comes well into sight, and one can readily and closely examine the epiglottis, glottis, and arytenoid cartilages, and remove any growth that may be present. For larger growths, which are connected with the wall of the pharynx, a more extensive incision is required, and one necessitating division of the pharyngeal walls as far as the lateral thyro-hyoid ligaments.

The hemorrhage may be arrested by compression with the finger, and the flow of blood into the larynx be prevented by plugging, which is effected by the introduction of a soft sponge through the pharyngeal wound and the pressure of the same against the larynx. The operation wound is closed by sutures, and the head kept bent.

The operation is indicated by the following circumstances:—

1. The presence of foreign bodies in the pharynx, which cannot be removed by the mouth, and which are firmly fixed in the pharyngo-laryngeal cavity.
2. The existence of tumors in the pharynx, which are inserted into the mucous membrane by a broad base, or arise between the layers of muscular tissue and mucous membrane.
3. With foreign growths in the epiglottis, the aryteno-epiglottidean folds or the arytenoid cartilages.

Tumors which grow from the anterior surface of the epiglottis or its edges, and also thinly-stocked polypoid growths on the anterior surface of the epiglottis, can be extirpated by the mouth. In all cases, however, where, on account of hemorrhage or the seat of the growth, this cannot be done with safety, or where the extent of the tumor is too great, sub-hyoid pharyngotomy is the operation to perform.

New growths on the posterior surface of the epiglottis, or on the aryteno-epiglottidean folds, can be safely and exactly removed on drawing the epiglottis forwards. By the same proceeding one might, in those not very rare cases of canceroid of the epiglottis, perform partial amputation of this structure, an operation which has hitherto not been practised. That amputation of the epiglottis is not dangerous is proved by many cases of suicidal cut-throat.

The greatest importance, however, is to be attached to the preliminary

tracheotomy, by which the danger of the passage of blood into the trachea is safely guarded against. By the introduction of a canula the respiration goes on freely, and one can, during the whole operation, keep the patient under the influence of chloroform. Tracheotomy is necessary on account of the hemorrhage into the lax submucous tissue in the neighborhood of the glottis, of possible oedema of the same, and to avoid the dangers attending the retention of the secretions of the wound. For these reasons one ought, in all cases of wound of the neck in which the epiglottis and the glottis are involved, to perform prophylactic tracheotomy, especially when sutures are used. Wounds in the neck, by the inflammatory or hemorrhagic infiltrations to which they may give rise, will often, even when the pharynx or larynx has not been opened, give rise to attacks of suffocation.

It having been proved beyond doubt that prophylactic tracheotomy should precede sub-hyoid pharyngotomy and also thyro-hyoid laryngotomy, the question remains whether this preliminary operation should be performed immediately, or some time before the main proceeding. Ehrmann performed tracheotomy on a woman who was threatened with suffocation, and forty-eight hours later removed by thyro-hyoid laryngotomy a polypous excrescence seated on the left inferior vocal cord. This delay was rendered necessary by the great exhaustion of the patient. Chloroform, however, permits one to perform one operation immediately after the other, and affords the advantage that there need be no necessity for doing the main operation during the period of febrile reaction.

ART. 7.—*On Cholera Contagion.*

By Prof. CROCQ, of Brussels.

(*The Lancet*, October 28.)

The question of cholera is at present one of so much importance, that all documents on the subject coming from recognized authorities, and bearing a practical character, must be noted with great care. Professor Crocq, of Belgium, Vice-President of the Brussels Academy of Medicine, has just communicated to the Paris Academy of Medicine the results of a series of experiments which he has carried on upon animals with the object of testing whether the alvine evacuations constitute the true vehicle of the choleraic virus. In all of the animals he has succeeded in producing most of the symptoms of cholera, and he finds that the alvine evacuations indeed constitute the vehicle of the virus—not, however, as was suggested by Pettenkofer, through a kind of fermentation, but because of the immediate presence of the virus in the evacuations. M. Crocq draws the following inferences from the results of his researches:—

1. Cholera is contagious, and is transmitted by a virus, the vehicle of which is the alvine evacuations.
2. The virus may manifest its effects even less than twelve hours before any evacuation of matter.
3. The period of incubation may be only of two hours; it may continue over one or two days, and even more.
4. All the subjects do not show a like predisposition to undergo the effects of the choleraic poison, receptivity may even be altogether absent.

ART. 8.—*Cases of Gastrotomy.*

By M. PÉAN.

(*Medical Press and Gazette*, December 2.)

In an oral communication recently addressed to the Academy of Medicine, M. Péan stated that, notwithstanding the troublous times of these last two years, he had performed gastrotomy thirty-two times in Paris, upon subjects aged from 16 to 68 years, during this period. In at least two-thirds of the cases, the patients, at the time of the operation, seemed as if they had but some

months, or even some weeks to live. In twenty-six instances the operation was well borne, and gave rise to no accidents that could be attributed to it. Four of the patients, however, died afterwards—two from epidemic dysentery, then ravaging Paris; one (a patient aged 16), from convulsions, which were probably tetanic, and came on six weeks after the operation, when the patient's health seemed quite re-established; and one from senile exhaustion, the subject being 68 years old. All the others are now in good health, and eighteen of their number recovered without having, even during convalescence, experienced any complication. Of the six patients who succumbed in consequence of the operation, two died some days after it from pelvic peritonitis, brought on by the entrance into the cavity of the peritoneum of some of the fetid pus contained in the tumor; another died some days after the operation, from the fright caused by the cannonade of Fort Bicêtre; one died from senile cachexia, she being 61 years of age, and deprived of proper nutriment during the blockade; and another also died from scorbutic hæmophilia, due to physical privations and moral suffering of all kinds during the siege. All these operations were performed at Paris, either within the fortifications or at a maison de santé at La-vallois-Perret, and the results prove that the air of Paris cannot be so deleterious as it has been represented to be. But if the place of operation does not go for much in the cure of these patients, this is not to be said with regard to the attentions paid to the cases consecutive to the operations. These are of capital importance, and it is to the extent to which they were carried out at this maison de santé that M. Péan attributes in great part the unexpected result he there attained of fourteen cures in sixteen operations.

ART. 9.—*Remarks on the Treatment of Itch.*

By TILBURY FOX, M.D., F.R.C.P.

(*The Lancet*, November 11.)

We talk of papular, vesicular, and pustular scabies; whereas the scabies itself is only the acarus in its burrow—the cuniculus with the vesicle at one end (the result of effusion set up by the entrance of the acarus), and the imbedded acarus, showing itself as a white opaque speck at the other end. All else is merely secondary to the irritation set up and the scratching practised for its relief. The papules are erected and congested follicles, the pustules suppurating follicles; and these papules and pustules occur as a part of many other diseases in which the skin is subjected to severe irritation. Kill the acari, and the secondary eruption disappears of course. But what do we do usually? We treat not only the essential disease, the real scabies—namely, the acarian furrow and its imbedded ova and acari—but also the secondary results in the same manner, applying to them the same parasiticide. Yet we should treat the former by parasiticides and the latter by soothing remedies; the more so as we know that the acari are generally to be found in certain localities. In recent cases in adults the localization of the acari to the interdigits and the region of the wrists is complete; and it is easy to do harm by intensifying the secondary irritation, though the original cause (the acari) may be destroyed by our remedies. Therefore, I say, in recent scabies use the parasiticides, sulphur or storax, petroleum, benzine, or the like, to the wrists and interdigits, and simple unguents to other parts. In chronic scabies the case is different, for here the acari may be more or less ubiquitous as regards the body. But even here a distinction is to be made: the parasiticide should be applied to the small and fine rash, and not to the ecthymatous pustules.

“Error number one, then, in the treatment of scabies, which is often made, is the application of parasiticides to ‘the wrong place.’ Error number two is the use of too powerful parasiticides. We need only use half a drachm of sulphur to the ounce of lard; there is no occasion for a stronger ointment nor for hellebore ointment. Gentle friction for a long time with a milder preparation is all that is required. Error number three is the use of parasiticides for too long a time. The use of a parasiticide for two or three days should be followe

by a good washing and the discontinuance of the remedies for a night. If the patient be not troubled with itching during the night he may conclude that the acari are killed, and all we need do is to guard against the hatching out of fresh acari by the light application of our parasiticide once a day to any 'pimply' places for a few days longer, taking care that the foul clothes are well heated or scalded. It often happens that the remedy used to destroy the acari is continuously used until it sets up on its own account severe irritation, which is mistaken for an increase or spread of the scabies. 'Not too strong, and not too long' is my rule for the use of remedies in scabies. The occurrence of red, rough, erythematous patches is a sign that the remedy itself is creating a disease.

"I do not like sulphur baths. Don't use them in recent cases; you need only treat the hand with parasiticides. In our new baths we shall cure our patients at a sitting, and disinfect their clothes at the same time. But in private practice you must follow the old-fashioned plan. I prefer, for ordinary use, an ointment made of half a drachm of sulphur, five grains of white precipitate, ten drops of oil of chamomile, five drops of creasote, to one ounce of lard. For chronic scabies sulphuret of potassium baths or an iodide of potassium lotion, one drachm to six ounces of water, are good; but I like the first-named remedy as well as any. Should we disinfect the clothes? Yes, by strong heat. I cannot prove to you that the clothes convey infection; but I believe it better to be on the safe side."

ART. 10.—*Case of Frambæsia, or Yaws.*

By J. P. HUGGINS, M.B., C.M., L.R.C.S.E., Surgeon to the Convicts, Trinidad.

(*The Lancet*, December 2.)

The following very remarkable case Dr. Huggins witnessed in one of the State hospitals. There are some facts which may prove interesting to the profession. It has been stated that the yaws is a disease which is highly contagious, but during the whole time the patient was under medical treatment none of the other patients were troubled with the disease, although we had many open ulcers.

The patient is an East Indian, a lad of fourteen years, and was admitted on the 11th October, 1870. When he came into the hospital he complained of fever, headache, pains in the back and loins, and general malaise. Assuming it was a case of ordinary malarious fever, Mr. Huggins ordered him a diaphoretic mixture and a warm bath; but on the next visit he was astonished to see a number of raised pustules resembling those of smallpox. They came out in different parts of the body, more especially on the elbows and knees, and, like the rash of typhoid fever, not at one time, but successively. They were at first about the size of a pea; then they grew larger, and from the top of them exuded a thick grumous fluid. In two or three days afterwards a fungoid excrescence came out, resembling that of a mulberry. Mr. Huggins put the patient under a course of iron, in the form of the arseniate, in quarter-grain doses, increasing to half a grain; dressed the ulcers with carbolic oil, and after the ulcers cicatrized, gave him ten grains of iodide of potash. The patient was discharged, perfectly recovered, on the 26th January.

Mr. Huggins is of opinion that the yaws is no more than a form of secondary syphilis, and is not a distinct disease.

ART. 11.—*Camphor with Bromine as a Sedative.*

By Prof. DENEFFE.

(*Presse Méd. Belge*, Nov. 19; and *Medical Times and Gazette*, Dec. 2.)

Prof. Deneffe, of Ghent, states that for more than two years he has employed a combination of camphor and bromine, which he thinks is entitled to general

attention. The celebrated chemist Laurent showed that bromine will easily unite with camphor at the ordinary temperature, but that the product is slowly decomposed by exposure to the air. M. Swartz, Professor of Chemistry at Ghent, has shown that this body heated in a closed vessel is resolved into hydrobromic acid and a crystallized compound, which is monobromized camphor (*camphor monobromé*), a body differing only from ordinary camphor by the substitution of an atom of bromine for an atom of hydrogen. It is a perfectly crystallized substance, fusible at 76° C., and boiling at 274° . At Prof. Swartz's request, M. Deneffe has investigated the therapeutical properties of this body, and has found it to be an excellent sedative for the nervous system. He intends shortly to publish his cases in proof of this, and in the present communication furnishes one of these, in which excitement of the nervous system passing into true delirium tremens was effectually relieved. He prescribed it in the form of pills, seventy grains being made into thirty pills, of which one was given every hour until twenty had been taken. For three days longer from forty-five to sixty grains were given in the twenty-four hours, the quantity being diminished from forty-five to thirty grains daily for a week longer. The recovery was progressive and stable.

ART. 12.—*On a New Method for Securing the Vessels of the Pedicle after the Removal of an Ovarian Tumor.*

By P. J. HAYES, M.D., Surgeon to the Mater. Misericordiæ Hospital, Dublin.

(*Dublin Quarterly Journal of Medical Science*, November.)

Dr. Hayes introduces to the notice of the profession a method he calls "sub-peritoneal," for securing the vessels of the pedicle after the removal of an ovarian tumor. In his opinion it will prove useful, especially where the pedicle is short. The proceeding closely resembles that known as the subcutaneous ligature of nœvus, and consists in firstly compressing the pedicle between the blades of a clamp or long forceps, then passing a needle armed with a stout catgut ligature beneath a good thickness of the serous surface of the pedicle, but superficial to the principal vessels; the needle being withdrawn at the side opposite to the point of entrance, is again passed into the aperture of exit, and pushed between the vessels and peritoneal covering on the side of the vessels opposite its first passage, until it can be withdrawn through the opening made by its first entrance; then the ends of the catgut ligature are to be strongly tied and cut off short, so as to prevent the possibility of hemorrhage from the included vessels; yet, owing to the bulk of unligatured substance superficial to the catgut, there will be no sloughing of the end of the pedicle, its vitality can be maintained, and even adhesions will probably connect it with some adjacent portion of the peritoneal surface, whilst, in time, the catgut inclosed by living tissue may become absorbed. Although bleeding from the chief vessels can be prevented in the manner described, yet it is quite possible that oozing may take place from the divided orifices of small circumferential vessels. In such a case the actual cautery applied to the cut surface will afford ample security against recurrence of bleeding. Should the pedicle be sufficiently long to permit of its being secured between the edges of the abdominal wound by means of an electro-gilt transfixing pin, the ends of the catgut (or other) ligature, instead of being cut off short, might be passed through the eye of the needle, and carried parallel to the vessels through the centre of the pedicle, so as to emerge at the cut surface, from which they could be withdrawn after the lapse of seven or eight days.

ART. 13.—*Cases of Muscular Anæsthesia.*

By ALFRED CARPENTER, M.D.

(The Lancet, December 2.)

At a meeting of the Medical Society of London, on November 13th, Dr. Alfred Carpenter, of Croydon, related the following cases of muscular anæsthesia.

The patients were two intelligent young ladies, the daughters of a city gentleman. The elder, M. H., aged twenty-eight, of average good general health, every function of organic life being properly performed, all the natural functions of the body being in a healthy state, has been under the care of Dr. Carpenter for the last three years without material alteration, except a gradual but decided decrease in muscular power. Now she cannot rise from her chair without assistance, and the attempt, when made with aid, is clumsily and awkwardly performed; when she has gained the erect position, she staggers, and is uncertain in her gait. The foot having been raised from the ground, there is an uncertainty as to where it will be placed, and it goes down with force, the heel first reaching the ground with a blow; as she cannot see the foot, she cannot tell how far it is from the ground. She can only retain the upright position as long as she knows assistance is at hand. She has more difficulty in starting than in continuing her movements. If she stands, and is told to shut her eyes and move, or if she is in the dark, she cannot remain upright, but at once falls. There is, however, no material loss of power, for the individual muscles are still strong, and some force is required to bend her joints against her will, though the muscular power is much less than it was two years ago. She can still lift a considerable weight, and carry it if her eyes are fixed upon it. Her sight is good, the pupils act equally and freely, and there is no defect in the co-ordinating power of the optic muscles; there is no congestion of the conjunctiva, no amblyopia; there is no want of association in the muscles of expression, but there is a slight effort required in speaking. There is clumsiness of movement in the upper extremity, for she cannot button a button or put in a shirt-stud unless she looks at it. She cannot use her fingers with any precision when out of sight, but can execute drawings of considerable merit. She used to play on the piano very well, but for the last five years the requisite movements have become unsteady and imperfect. Her memory and hearing are quite right. She never suffers from pain of any kind; there are no starts or jerks or muscular tremors. Urinary organs and secretion normal. She has a lateral curvature of the spine, with some flattening of the ribs on the right side, in the middle of the dorsal region. The distortion, which is considerable behind, does not alter the shape of the chest in front. There is no cutaneous anæsthesia—the neighborhood of the joints is naturally sensitive. No numbness or formication is felt in the ordinary position; but if she sits up in bed with the knees drawn up before her, and a weight is kept on her knees, there is a feeling of numbness and deadened sensibility in the lower limbs. There is no marked reflex action, and no effect follows upon irritating the soles of the feet. She is able to localize sensations excited by the use of a pair of compasses in a normal manner, though the tactile sensibility of the lower extremities is, if anything, rather lessened. She is the second of eight children; her parents are healthy. At twelve her shoulder was said to have "grown out." Dr. Little ordered a supine position, with no mental work and daily muscular exercise. Iron supports were used for four years. The catamenia appeared at fourteen; at eighteen the supports and treatment were omitted. Her general health was good, but the unsteadiness of gait continued, and, as she developed into a young woman, increased. She was placed under the care of a leading physician six years ago, kept perfectly recumbent fourteen months, and treated with steel after that time without benefit. She came under Dr. Carpenter's care in 1868.

The condition of the younger sister, E. H., aged twenty-six, is very similar,

but the symptoms are not so advanced, neither is she so helpless as her sister was three years ago. She has followed similar plans. The irregular gait was observed when she was fourteen. She is now well developed, with a healthy rosy face. When she speaks, it is with hesitation, and as if she had something in her mouth. She is able to thread her needle, but could not touch the tip of her nose if her eyes were shut. She walks more nervously than her sister, and her progression is more sudden, amounting to a half run.

Dr. Carpenter summed up the points upon which he asked the opinion of the Fellows under four heads—viz., (1) the cause of the development of the disease, (2) its nature, (3) its pathology, (4) its treatment. He referred the first point to some hereditary defect in nutrition of nerve matter—that the curvatures were coincident in point of time with development of disease as effects of a common cause—viz., degeneration of nerve matter; that they were not cases of locomotor ataxy at present. He combated the opinion of the translator of Trousseau's *Clinical Medicine* that the pathognomonic sign of locomotor ataxy "was the peculiar deficiency in the power of co-ordinating voluntary movements," basing his objection on the absence of pain, of urinary disturbance, or ocular complication, as well as the fact implied by their youth and sex. The want of co-ordinating power being the most prominent symptom, he considered that in these cases the mischief was limited to the cord, and that there was no cerebellar complication, this idea being supported by the absence of subjective symptoms of brain disturbance and the superior intellectual power. He referred to the experiments of Claude Bernard, which prove that when the posterior roots of the spinal marrow are divided there is less co-ordinating power, that the harmony of movement is interfered with, and that Dr. Lockhart Clarke had distinctly made out that the posterior roots of the spinal cord were diseased in locomotor ataxy. The author concluded that in these cases, when the posterior column was diseased, the irritability of the muscles was found to be depressed, whilst their sensitiveness to pain was increased, and that electric currents excited violent pains. This was not the case with these patients; moderate galvanic currents were not distressing. The author also pointed out a typical case of locomotor ataxy, showing the different manner of progression as compared with the gait of these young ladies.

A discussion then took place, in which Dr. Lockhart Clarke and Dr. Richardson joined, at the conclusion of which the President proposed that a committee be formed to examine these cases, and report to the Society at the next meeting. He named Drs. Richardson, Hughlings Jackson, and Carpenter, and requested the assistance of Dr. Lockhart Clarke. The discussion was then adjourned, the President thanking Dr. Carpenter for his interesting communication, and also the young ladies for the opportunity they had afforded the Society of seeing them.

At the meeting of the Society on Nov. 20th, the discussion on Dr. Carpenter's interesting cases was resumed. The report of the committee confirmed the original description of the cases, and stated that muscular contractility was greatly impaired, but not so the muscular sensibility.

Dr. Lockhart Clarke recommended the continued current, with phosphates and stimulants, in such cases.

Dr. Hughlings Jackson had never seen similar cases. They were not instances of locomotor ataxy or of cerebellar disease.

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END OF VOL. LIV.

THE
HALF-YEARLY ABSTRACT
OF THE
MEDICAL SCIENCES:

BEING
A DIGEST OF BRITISH AND CONTINENTAL MEDICINE,
AND OF
THE PROGRESS OF MEDICINE AND THE COLLATERAL SCIENCES.

Apparatu nobis opus est, et rebus exquisitis undique et collectis, arcessitis, comportatis.
CICERO.

EDITED BY
WILLIAM DOMETT STONE, M.D., F.R.C.S. (EXAM.)

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HALF-YEARLY ABSTRACT

OF

THE MEDICAL SCIENCES,

ETC.

PART I.

PRACTICAL MEDICINE, PATHOLOGY, AND THERAPEUTICS.

SECT. I.—GENERAL QUESTIONS IN MEDICINE.

ART. 1.—*On Disease and its Remedial Treatment.*¹

By JOHN S. BRISTOWE, M.D., F.R.C.P., Physician to St. Thomas' Hospital.

(*Medical Press and Circular*, March 27.)

THE first lecture was delivered on the 6th March. The lecturer endeavored in the first place to define the word "disease." He argued from the facts of parasitic diseases, of infectious fevers, such as scarlet fever, of inflammations, of tumors, and of diseases originating in mechanical causes, that the biography of every disease comprises some specific cause, and certain resultant phenomena, vital, chemical, or mechanical, which are, or which produce, the symptoms by which we recognize its presence; and then suggested the following as a definition of disease, namely, that it is "a complex of some deleterious agency acting upon the body, and of the phenomena (actual or potential) due to the operation of that agency." He admitted that there were difficulties in the way of accepting this definition, and proceeded to discuss the importance in this respect of some of these difficulties—especially those arising out of developmental diseases, inflammations, and tumors, and out of the fact that all diseases involve (in a greater or less degree), not only certain groups of pathological changes springing directly from their respective morbid causes, but that these primary pathological changes themselves tend to evoke others, these again a tertiary series, and so on continuously. In reference to this latter subject, he adduced scarlet fever, syphilis, and various other diseases, and enumerated the various incidents essential to each, and most of those which are apt to come on as complications or sequelæ; and argued from the facts which he brought forward, that in the first place every separate incident of a disease considered with its immediate cause, or with its immediate consequence, might properly be regarded as a disease, and in the second place, only those morbid conditions should be regarded as constituting an essential part of the primary disease which spring directly from the operation of its cause, and none of those which continue in active operation after the destruction or disappearance of the cause.

He then enumerated, for the purposes of his subsequent remarks, certain classes of diseases, namely, 1st, functional; 2d, those originating in excess, deficiency, or improper quality of nourishment; 3d, those arising from retained excretions; 4th, those due to the action of poisons; 5th, those originating in me-

¹ Croonian Lectures; delivered at the Royal College of Physicians of London.

chanical causes; 6th, parasitic diseases; 7th, inflammatory diseases and tumors, and 8th, those generated by contagium. And he devoted the remainder of the lecture to the consideration, in respect to several of these, of the methods by which they act injuriously on the system, and the methods by which in the event of recovery taking place, that recovery is effected by the operation of nature. On the whole, he appeared to entertain the belief that nature, if regarded as a physician, is somewhat of a bungler; and that the so-called *vis medicatrix* is often wide of the mark, often inoperative from its very violence, and sometimes (as in the case of the exanthemata) little else than a process for multiplying enormously the poison and scattering it broadcast.

The second lecture was given on the 8th March. Dr. Bristowe commenced this by quoting from Dr. Paris's *Pharmacologia* the objects which that physician enumerates as desirable to obtain by mixing and combining medicinal substances. And while admitting the importance of endeavoring to carry out those objects in writing prescriptions, he pointed out that such rules are rather for those who understand, or who believe they understand, the actions of medicines in relation to the processes of disease, than for those who are investigators of the actions of drugs. He then went on to consider some of the difficulties with which medical men have to contend in endeavoring to estimate the curative influence of drugs. Among these he enumerated—1st, the regular course of many diseases, in virtue of which the same result is apt to follow on the most opposite plans of treatment; 2d, the unanticipated changes which attend many (especially functional) diseases, and in which, therefore, a natural change for the better is often ascribed to the influence of drugs; 3d, the fact that medicines are constantly combined, not merely with other drugs, but with changes of diet and numerous other hygienic conditions, which latter are themselves probably of important effect; and 4th, the domination of theories of disease and of treatment, inclusive of the theories which practitioners are apt to invent (half unconsciously) for their own guidance.

He next made a few observations upon functional diseases, and pointed out that, little as is understood of their intimate pathology, it is over these perhaps more than over any other kinds of diseases that physicians have influence by means of their art. Diseases due to poisons, and those originating in excess, deficiency, and improper quality of nourishment, and the morbid conditions due to the retention of bile, urea, etc., were dismissed with a few remarks. Upon those which he termed mechanical, however, he spoke at some length. He took successively the cases of canals obstructed by concretions, and those in which stricture is present (including among the latter diseases of the cardiac valves); and endeavored to show that the muscular hypertrophy and dilatation of canals which follow obstruction are in no proper sense of the term either beneficial or curative; that the dilatation is as much a source of weakness as the hypertrophy is a source of strength, and that they neutralize one another almost from the beginning; and he pointed out that experience had long since proved that in all such cases the efforts of the medical man ought to be to restrain rather than to excite the action of the hypertrophied organs. In reference to parasitic diseases he asserted that only those in which drugs can be made to operate directly are amenable to curative treatment; and remarked that he should be inclined to believe in the curability of trichiniasis by internal remedies when itch should be shown to be capable of elimination by brimstone and treacle or diaphoretics. He then passed on to the subject of inflammations, which he discussed at considerable length; and while admitting the beneficial effects of local remedies when they could be applied directly to local inflammations, and the beneficial influence in reference to many of the symptoms and complications of inflammation which might be effected by various remedial measures, he still inclined strongly to the belief that inflammations as a rule do not admit of being curtailed in their duration by drugs taken into the system. He agreed with Dr. Hughes Bennett and others as to the incurability of pneumonia by medicines; and he agreed also with Sir W. Gull and Dr. Sutton in their observations in respect to the treatment of rheumatism.

The third lecture was delivered on the 13th March. The lecturer spoke first of effusions, and more especially of anasarca and encysted dropsy. He showed

by examples that in all cases where the cause of dropsy is removed the dropsy disappears of itself; and hence that the first indication for treatment is the cure or removal of the cause; but that in most cases the dropsy is traceable to progressive structural diseases which do not admit of cure. He insisted, however, that the stage of dropsy is very frequently anticipated in consequence of general ill-health, and that hence in very many cases the improvement of the general health is efficient in removing the dropsy for a time. He admitted the good effects of diuresis, purgation, and diaphoresis, and more especially of the latter, in anasarca; but he doubted whether either of them had any directly beneficial influence on encysted dropsies.

In speaking of innocent tumors, he referred especially to goitre and the supposed influence of iodine over that disease. He remarked that when the influence of iodine over goitre was first discovered, it was equally found to cure man of his testicles and woman of her breasts; but that this effect of iodine over the latter organs had long since been disproved. And he ventured to believe that goitrous necks are just as numerous in the Swiss valleys now as they were before iodine was discovered.

He made some remarks upon tubercle and syphilis, and then devoted the rest of his lecture to the specific infectious diseases. He first spoke briefly of the importance of preventive measures; then of the importance of an accurate acquaintance with the natural history of each disease, so that the physician might foresee and anticipate danger and complications; and then of the many ways in which during the progress of his malady he might relieve and benefit his patient by treating the symptoms. And then, in conclusion, he discussed at some length the theory of elimination, with especial reference to diseases of this class. He insisted that although the contagium undoubtedly did circulate in the blood, and probably multiplied therein, it remained in it for a marvellously short time, since it could not be detected microscopically in the circulating fluid, and the blood itself was rarely if ever infective; and that there is no sufficient reason to believe that the specific symptoms of these specific diseases are due either to the presence of the contagium in the blood, or to its operation upon it. He insisted on the contrary (and brought forward arguments in favor of his opinion) that the specific effects only arise when the circulating contagium sows itself in the solid tissues external to the vessels, and that these specific effects are due to the processes which go on outside the vessels. He maintained that the so-called elimination from the blood is, in fact, the sowing of the disease in the tissues of the body, preliminary to its multiplication, or fructification, therein; and that it is during this latter process that most, if not all, that is dangerous occurs. He argued from the exanthemata to cholera, and maintained that here equally as in smallpox and scarlet fever, the so-called process of elimination of poison is a process of manufacture of poison. And argued, in reference to all such diseases, that experience, on the whole, is decidedly opposed to the efficacy of treatment aiming at elimination.

ART. 2.—*Pathology and Treatment of Pyrexia.*

By CHARLES MURCHISON, M.D., LL.D., F.R.S., Physician to St. Thomas' Hospital, and Joint Lecturer on Medicine at St. Thomas' Hospital Medical School; etc.

(*British Medical Journal*, February 17.)

The facts and arguments bearing on the pathology of pyrexia Dr. Murchison sums up as follows:—

1. That pyrexia is a morbid condition of the blood, due to the entrance of some poisonous matter from without or generated within the body, or to some local injury or inflammation, which exercises a paralyzing influence on certain portions of the nervous system, and particularly on the sympathetic and the vagus.

2. Increased rapidity of the heart's action is one of the earliest results.

3. A second result is a rapid disintegration of the nitrogenous tissues into substances of a simpler chemical construction, while little or no fresh material is

assimilated to compensate for the loss. Increased temperature, great muscular prostration, and loss of weight are the natural consequences.

4. Non-elimination, from any cause, of the products of this disintegration gives rise to cerebral (typhoid) symptoms or local inflammations.

5. The impaired nutrition of the heart itself and of the rest of the body, in conjunction with the polluted state of the blood and the nervous paralysis already referred to, induces in severe cases of fever great weakness of the cardiac contraction, and stagnation of blood in the capillaries in different parts of the body.

The Prognosis in any case of pyrexia Dr. Murchison states will of course be greatly influenced by its cause; but, irrespectively of the cause, there are certain conditions which must always be regarded as of serious import.

1. In grave fevers the prognosis is worse in robust full-blooded persons with abundance of muscle and fat than in those of spare habit, because in the former there is more material to spare for disintegration during the febrile process. In scarlatina it is a matter of daily observation that the plump and ruddy child succumbs, while the spare and more delicate-looking child pulls through. And in adults it may be said that all fevers are grave in proportion to the development of muscle and fat.

2. The prognosis is always bad when severe fevers attack individuals in whom the defecation of the blood is naturally imperfect—for example, in persons of a gouty diathesis.

3. The danger in any case of fever is increased by the fact of the patient having a naturally weak heart, not so much from the presence of valvular disease as from weakness in the contracting power of the muscular walls. Its strength may be sufficient for the ordinary work in health; but when fever occurs, the work is increased while the organ is further weakened, and then it is apt to break down.

4. The danger is always great when there is evidence of antecedent renal disease. To the kidneys we must look for the elimination of the large amount of nitrogenous detritus resulting from the febrile process; and, when the eliminative power of these organs is impaired by disease, the peccant material is retained in the system, with the deleterious consequences already described. Here, again the kidneys may be sufficiently sound for the due performance of their functions in a state of health, although they are quite incompetent to discharge the additional work thrown upon them in pyrexia.

5. In most fevers the prognosis is bad in proportion to the intensity of the pyrexia, as measured by the thermometer. With few exceptions, a case with a temperature of 105 deg. must be looked on as severe; and one with a temperature of 107 deg. as highly dangerous.

6. In any case of fever the prognosis will be bad in proportion to the intensity of the typhoid state; and when convulsions occur in the typhoid state, recovery is rare.

7. In any case the prognosis will be bad in proportion to the weakness of the heart, and the tendency to stagnation of blood in the capillaries of the lungs and other parts of the body.

In regard to the treatment, Dr. Murchison states that our objects ought to be as follows:—

1. To remove, when possible, the cause on which the fever depends.

2. To promote elimination, not merely of any morbid poison, but of the products of exaggerated metamorphosis in the blood and tissues.

3. To reduce the temperature and the frequency of the action of the heart.

4. To maintain the nutrition of the tissues and stimulate the action of the heart by appropriate food and stimulants, taking care, at the same time, not to excite congestion or increase the work of the already overtasked glandular organs.

5. To relieve dangerous and distressing symptoms.

6. To obviate and counteract secondary complications.

It is not often that we have it in our power to remove the cause of pyrexia; but the object is one always to be kept in view, and sometimes the main efforts of our treatment must be directed to secure it; as, for example, when pyrexia

depends upon pent-up pus, an obstructed bowel, or gouty, syphilitic, or periosteal inflammation.

The elimination of any morbid poison, as well as of the products of exaggerated metamorphosis, will often be promoted by the judicious employment of diaphoretics, diuretics, purgatives, and emetics. The old practice of giving a purgative to unload the portal circulation and promote the action of the liver, is undoubtedly a good one, and is particularly advisable in persons of robust habit, or who live too well. In mild cases of pyrexia, the only treatment necessary consists in the avoidance of any chill, and in the administration of a mild aperient, followed by frequent doses of diuretics and diaphoretics, such as the citrate of potash, or the liquor ammoniæ acetatis with spirit of nitrous ether. Elimination will also be promoted by a plentiful supply of fresh air, which will favor the escape of carbonic acid from the lungs, and by the free use of diluents, which will help to wash away through the kidneys the products of tissue-waste. In all grave cases of fever the importance of maintaining the action of the kidneys, and of keeping a good watch on the state of the urine are to be remembered, noting carefully not so much the color of the urine and the presence or absence of lithates (both of which characters will depend much on the quantity), but the quantity and the presence or absence of albumen. When the quantity becomes notably diminished, or albumen appears, advantage will often be derived from hot poultices to the loins, aperients, diaphoretics, diluents, and diuretics. But while we promote elimination, we must take care that the means for this end do not weaken too much the action of the heart; and we must remember that, in some fevers, the natural processes of elimination are excessive, and conduce to dangerous exhaustion and death.

For reducing the intensity of the pyrexia, different measures have been proposed. *Blood-letting* was at one time universally resorted to for this object, but in this country it is now entirely discarded, because it was found to increase one of the great dangers in pyrexia, viz., failure of the heart's action. *The external use of cold water* is one of the most certain means of reducing temperature in pyrexia, and in certain cases is attended with good results.

Statistics have been appealed to to prove the great success of the cold-water treatment of fevers (particularly of enteric fever) as contrasted with that of an expectant method; and, although other conditions not stated may have helped to influence the result, they suffice to show that the practice is not beset with the dangers commonly imagined. But the most conclusive facts in favor of the practice are those observed in certain cases of hyperpyrexia by Dr. Wilson Fox¹ and others, where its employment was followed by recovery from an elevation of temperature (110° Fahr.) which under every other method of treatment has been speedily followed by death. At the same time there are many cases of pyrexia in which the cold affusion or immersion would be unsuitable or injurious. It is likely to be of most service when the temperature is unusually high; and in all cases the practice is contra-indicated when the temperature is under 102° Fahr., or when the extremities are cold, although the temperature of the central parts of the body be high; and it must always be employed with caution when there are signs of weakened cardiac action or of stagnation of blood in the capillary circulation, although it may be noted that in one of Dr. Fox's patients, who was apparently rescued from death, the face was cyanotic and the radial pulse imperceptible.

There are different plans for employing cold water in the treatment of pyrexia, such as the cold affusion practised by Currie, packing in a cold wet sheet resorted to by Brand, or immersion in cold baths. The last is the method now most in fashion. The patient is placed in a bath having the temperature of from 50° to 70° Fahr., or better, as Ziemssen recommends, in one whose temperature is about 10° below that of the body, but which, after the patient's immersion, is gradually cooled down to 68° by adding cold water. He should remain in the bath for half an hour, or until shivering comes on, and all the time he is in the bath his limbs ought to be rubbed by assistants. He is then

¹ On the Treatment of Hyperpyrexia by means of the External Application of Cold. London: 1871.

to be hastily dried and put in a warm bed. For some time after the bath, the temperature in the rectum continues to fall as the trunk parts with its heat to the extremities; but as soon as the temperature in the rectum rises again to 104°, the patient ought to have another bath. In the early stages of the fever, as many as seven or eight baths in the day may be necessary. When cold affusion or immersion is contra-indicated or inexpedient, frequent sponging of the surface with cold or tepid water will also help to cool the body, and is often a source of much comfort to the patient.

Quinine in large doses has an undoubted influence in lowering the temperature of pyrexia. In most cases of severe pyrexia, ten, fifteen, or twenty grains will, within an hour or two, cause a fall of the temperature to the extent of three or four degrees, and to a less degree of the pulse.¹ It is true that the effect passes off after a few hours, and that there is no good evidence (except in malarious fevers) of its cutting short the natural course of the attack; but the effect may be maintained by a repetition of the dose; and the remedy has often appeared to me to be of signal service when a pyrexia was at its crisis, and when the temperature was rising in place of falling.

Digitalis, Aconite, and Veratrum Viride have a marked power in reducing the pulse, and, to a less extent, the temperature in pyrexia, and are, in Dr. Murchison's opinion, too much neglected for these objects in practice. *Veratrum viride* is largely used in America in the treatment of fevers, and its effect upon the pulse is speedy and most decided; the only objection to its use in private practice which Dr. Murchison's experience suggests is its liability to induce sudden nausea and faintness, but these symptoms are transient, and cease on the administration of a stimulant. Ten or fifteen minims of the tincture may be given every four or six hours. *Aconite* is a remedy of great value for reducing the pulse and temperature in fever, and especially in the pyrexia resulting from inflammations, and is much less used than it deserves to be. *Digitalis* is another remedy which Dr. Murchison has often found very serviceable in various forms of pyrexia. While increasing the force of the cardiac contractions, it diminishes the frequency of the pulse, reduces the temperature, and increases the flow of urine. Lastly, *antimony* reduces, in a marked degree, the frequency of the pulse in pyrexia, and promotes diaphoresis and mucous secretion. It was at one time largely used in all fevers, but in many it is contra-indicated by its tendency to weaken the contracting power of the heart.

The nutrition of the body may be maintained by appropriate food, in the form of milk, beef-tea, eggs, and farinaceous articles.

In every case of pyrexia, we must combat dangerous symptoms as they arise. Stagnation of blood in the pulmonary capillaries impeding the aëration of the blood is to be met by stimulants, such as alcohol, carbonate of ammonia, and ethers. *Digitalis*, by strengthening the heart's action, and turpentine, which seems to stimulate the capillary circulation, are also useful under these circumstances; while advantage will likewise be derived from mustard and linseed poultices to the chest, sometimes from dry cupping of the chest, and from warm applications to the feet. When uræmic symptoms predominate, the action of the skin and bowels is to be promoted, *digitalis* and saline diuretics may be given to increase the flow of urine, sinapisms and linseed poultices are to be applied over the loins; while attempts may be made to rouse the patient by cold affusion to the head, by blistering the shaven scalp with liquor ammoniæ, and by sinapisms to the nape and feet. Diarrhœa, pain, sleeplessness and delirium—which, if unchecked, hasten exhaustion and prevent recovery—must be treated by appropriate means. We must counteract, as far as possible, secondary complications, and two errors must be avoided; first, the remedial measures adopted should not thwart the natural modes of recovery, or favor the natural modes of death; secondly, pyrexia must not be treated on a purely expectant plan, since the natural termination of pyrexia may be death, as well as recovery.

¹ For evidence on this point, see Report of Committee (of which Dr. Murchison was a member) of Clinical Society.—*Trans. Cl. Soc.*, 1870, vol. iii.

ART. 3.—*On the Cerebral Mechanism of Thought and Speech.*¹

By W. H. BROADBENT, M D., F.R.C.P., Physician to St. Mary's and the Fever Hospitals.

(*The Lancet*, February 24.)

The objects of the paper were stated to be, by means of the light thrown upon cerebral physiology by cases of loss and derangement of speech, to construct a theory of the mechanism of thought and language, and to connect this with the facts of cerebral structure so far as known.

Ten cases were related in the first place, of which the most interesting were—

1. A case of right hemiplegia with loss of speech and writing. The hemiplegia temporary; the loss of speech permanent, except as to a few words mostly used in the expression of feeling; loss of writing absolute. She was, however, able to read; and displayed great energy and resource in recovering the control of her property, of which she had been deprived under the idea that she was imbecile. On post-mortem examination three years after the attack, two apoplectic cysts were found in the upper margin of the fissure of Sylvius of the left hemisphere; one in the posterior part of the third frontal convolution; another further back, the latter involving also some of the convolutions of the island of Reil.

2. A case of abscess in the frontal lobe, not affecting the surface of the third convolution or the island of Reil, but involving the white substance of the third frontal gyrus deeply. The order in which the symptoms appeared was—slight paralysis of right face; then incipient loss of speech and writing; a few days later total loss of speech and writing, with right hemiplegia; subsequently partial recovery of speech.

7. A case of congenital asphasia, without idiocy, in a boy aged twelve, who understood all that was said, could be sent on errands, etc., could write his own name, and copy from printed into written characters, but could not speak except to say "yes," "no," "father," and "mother;" indistinctly answered "kreigur kruger" to all questions; could not write the simplest word, such as "no," from dictation, or understand the simplest written question, but could write and understand figures.

8. A case in which an intelligent man, after head symptoms, completely lost the power of reading either printed or written characters, while he could write readily and correctly from dictation or spontaneously. His conversation was good and his vocabulary extensive, but at times he was at a loss for a name, and he was quite unable, when asked, to name the simplest and most familiar object presented to his notice. The loss of power to read was of course a part of this more general loss of power to name. He died from hemorrhage into the left temporo-sphenoidal lobe, which penetrated into the ventricle. Two old hemorrhages were discovered: one in the substance of the infra-marginal convolution of this lobe; another, larger, which had apparently caused softening of the adjacent brain-substance, between the extremity of the fissure of Sylvius and the ventricle where the descending cornu is given off. The latter would involve most important fibres. The extent of softening could not be ascertained on account of the recent hemorrhage into the same part.

The 9th and 10th were cases in which, with derangement of speech in the 9th, and absolute loss in the 10th, there was loss of comprehension of words with ready interpretation of signs.

The cases related, so far as they bear on the question, are all corroborative of the view which assigns a close functional relation with language to the left third frontal gyrus; and, as the result of his own observation and of examination of many cases published as exceptions, the author considers this relation to be absolutely established, not, however, in the sense of its being the seat of a faculty of language, but as an important link in the cell and fibre mechanism

¹ Read at a Meeting of the Royal Medical and Chirurgical Society, on February 13th.

for speech, which mechanism may be interrupted at other points above or below, as well as at this particular node.

The distinction established by Sanders, W. Ogle, Bastian, and others between amnesia and aphasia proper or ataxic aphasia implies lesion at different parts; and a further subdivision of amnesic cases may be made, Case 8 being used as an illustration. Here an object seen no longer evoked the appropriate name; the channel between the visual centre and the intellectual centre was interrupted. And if a similar interruption occur in the channel from the auditory centre to the intellectual centre, so that articulate sounds no longer revive the accustomed intellectual associations, the patient will on the one hand be incapable of understanding what is said to him, and, on the other, will have no check on his own utterances. The lesion will in a case of this kind be at a different spot from that which destroys the memory for words (amnesia), or the memory for the utterance of words (aphasia).

The results of the author's careful examination into the course and distribution of the fibres in the cerebral hemispheres are, that the fibres radiating from the crus and central ganglia and the fibres of the corpus callosum are distributed almost exclusively to the convolutions of the longitudinal and Sylvian margins of the hemisphere, the intervening convolutions receiving no radiating or callosal fibres. These latter convolutions, which are thus withdrawn from immediate relation with the outer world, which are also those that are latest in order of development, and which make the difference between the human and quadrumanous brain, he considers will be those engaged in intellectual operations, receiving the raw material of thought from marginal convolutions at the summit of the sensory tract and employing in the expression of the volitional product of thought the marginal convolutions which are in fibrous connection with the motor ganglia and tract.

The theory of the mechanism of speech and thought is a modification of that of Dr. Bastian,¹ agreeing with it that the materials of thought are remembered impressions, and not remembered movements, and that there are definite cell-areas in the hemispherical cortex in which impressions are translated into perceptions, which may be called "perceptive centres," but differing from it in relegating to these perceptive centres, which will be situated in the marginal convolutions, only the rudimentary perceptive act, and in making the higher intellectual elaboration by which an idea is evolved the function of a new cell-area in some of the superadded convolutions upon which perceptions from various senses are converged, and in which they are combined or fused into a conception of which a word is made the symbol.

A part of the general theory is an hypothesis as to the nervous change which is the concomitant of sensation, which is taken to be absorption of the force of the impinging impression and integration of matter in the cells concerned, which may be compared to the fixing of luminous vibrations by the green cells of plants. On this view, the seat of sensation would vary in different classes of animals, and at different periods in the development of the human intellect, gradually shifting upwards from the thalami to the marginal and superadded convolutions.

Considering first the mechanism of speech, words may be regarded from two different aspects—firstly, as motor processes; and, secondly, as intellectual symbols.

As movements, they will be represented by groups of cells in the corpora striata; and the grouping of the cells, taking place under the guidance of the auditory sense, which is bilateral, will also be bilateral—that is, motor cell-groups representing articulate sounds, will be formed in both corpora striata. As the left third frontal gyrus, however, is the outlet for intellectual expression, the sound groups in the left corpus striatum will take the lead in speech, and thus, though speech is not lost in lesion of this corpus striatum, the temporary embarrassment is greater and lasts longer than in lesion of this ganglion on the right side, till the way round is opened from the left third frontal gyrus to the

¹ *British Medical Journal*, May, 1869.

right corpus striatum, which will probably be by the corpus callosum and right third frontal.

As intellectual symbols, words are primarily revived auditory impressions, and are probably represented in the auditory perceptive centre by receptive cell-groups. The auditory perception of a given name will be associated with other perceptions, to which the object indicated gives origin, in the cell-area which constitutes the higher centre, and will come to stand for the resultant of these impressions generally. The way out from this higher centre is seen from pathological evidence to be the left third frontal gyrus. Words other than names are intellectual agents rather than intellectual symbols; are employed in mental action, not impressed upon the mind in association with visual and other perceptions. We can thus approximately understand how names may be forgotten while the framework of a sentence is readily uttered, or even a periphrasis invented.

The action of the hemispheres is apparently necessarily bilateral as far as the formation of rudimentary perceptions, the marginal convulsions being symmetrically associated by the corpus callosum. The unilateral employment of the left hemisphere only becomes possible in the superadded convolutions, and the unilateral education of Broca and Moxon is a motor, or rather efferent, education only.

The mechanism of thought is so far prefigured in that of language that a detailed exposition of it need not be recapitulated.

Mr. Power said that he wished to ask Dr. Broadbent one question, and that in order to make his meaning clear he would illustrate it by a diagram. An object, say a cube, was presented to a child; and the visual impression excited was communicated to the optic ganglia, by which it might be at once reflected downward; but more commonly it was not reflected, but ascended to a higher centre. At the same time the name of the object was pronounced in the child's hearing, and the resulting auditory impression reached the auditory ganglion. If not there reflected, it likewise ascended to the higher centre. At the same time the child touched the object, and the tactile impression followed a course similar to that of the others. The three impressions, meeting in and combined by the higher centre, occasioned the formation of the complex idea of a cube, and this, operating downwards upon the muscles of articulation, led the child to say "cube." An arrest of this process on the sensory side of the combining centre produced amnesia; an arrest on the motor side of the combining centre produced aphasia. Where, in the whole, did Dr. Broadbent place the corpus striatum?

Dr. Broadbent replied that he placed the corpus striatum between the combining centre and the muscles of articulation, as the organ by which the former acted upon the latter.

Mr. John Wood inquired how far the method of teaching the deaf to speak by watching the lips of others would harmonize with Dr. Broadbent's views.

Mr. Savory accepted the distinction drawn by the author between language and words; but objected that, on the view propounded, the mechanical act of speech was seated in centres which were comparatively more developed in the lower animals than in man. If that were so, he should expect the faculty of speech to be widely diffused among the lower animals, instead of being limited to a few birds.

Dr. Wilks expressed his general assent to the views of the author. The acquirement of language was a complex process; and might be imperfect in the sense that some of its ordinary factors might be omitted. Thus it was quite possible to learn a foreign language by sight only, so as to read it by the eye with perfect comprehension; while yet ignorant of its sounds, and unable either to speak it or to understand it when spoken.

Dr. Broadbent, in reply, said that he had located the mechanical act of speech in the corpora striata, because he regarded those bodies as the centres of muscular movement generally. Mr. Savory was mistaken in supposing that they were comparatively more developed in the lower animals than in man. Their development, throughout the animal kingdom, followed very closely that of the cerebral hemispheres, and reached its highest point in the human species.

ART. 4.—*On the Diagnosis and Complications of Scurvy.*

By MANUEL LEVIN, M.D.

(Gazette Médicale de Paris, No. 49, 1871.)

The following statements are taken from a report on an epidemic of scurvy, which occurred in the military hospital of Ivry during the late siege of Paris:—

"The diagnosis is not difficult, except at the very commencement of the disease, when the patient is feverish, and complains of pains in the back and joints.

"One may regard as rheumatism what is but an attack of scurvy, but doubts are soon removed after the appearance of purpura and ecchymoses.

"The diagnosis is founded on three symptoms: subcutaneous and muscular hemorrhages, cardiac symptoms, and softening of the gums.

"One or other of these symptoms may be wanting; hemorrhages may even fail to manifest themselves in the skin, and be only intramuscular, and then they may consist solely in swelling of the calf and thigh.

"The scorbutic subject may present only softened gums and a cardiac bruit with the second sound and at the base without having purpura and ecchymoses on the lower limbs; or again may present softening of the gums with purpura and ecchymoses of the lower limbs with no other symptom.

"In other instances the gingival softening may be absent, the cardiac sounds be frequent, obscure, mingled or not with a blowing sound at the base with the second cardiac sound; and the integument of the legs covered with purpuric spots.

"The disease which bears the greatest resemblance to scurvy is purpura.

"According to Grisolles these two maladies are identical—purpura being the acute and scurvy the chronic form of one affection.

"Scurvy, as I have previously demonstrated, is by no means a chronic affection, and may not last longer than one month.

"It is certain that we know nothing definitely concerning purpura; so to assimilate, like Grisolles, these two affections is to judge of a question of which one of the terms is unknown to us.

"During the siege of Paris I observed cases of general dropsy associated with ecchymoses on the lower limbs. The patients were debilitated individuals.

"This dropsy commenced in the lower limbs, which were covered by ecchymoses, and then became general, the patients frequently succumbing to phthisis.

"Those cases may be mistaken for scurvy.

"What distinguishes the former, however, is the presence of albumen in the urine, which is never met with in scurvy, diminution of the albumen and fibrin of the blood, whilst in the blood of scorbutic patients these elements are found in greater quantities; and finally I have never observed tubercle in connection with scurvy.

"Complications.—Scurvy does not seem to be modified by the age of the patient, or his constitution, or by the presence of diathetic affections.

"The manifestations are the same in the young and in the aged.

"It has been stated that the scrofulous constitution renders the disease more severe.

"I have had under my care several types of scrofulous subjects.

"One patient had been blind for several years in consequence of scrofulous ophthalmia, and had in the neck and front of the sternum cicatrices resulting from chronic abscesses. In this subject scurvy took its usual course, and was readily cured.

"Another patient was a young man, whose mother had died from phthisis. He suffered from a large glandular tumor in the neck, and chronic blepharitis. This patient recovered from scurvy without the development of any complications.

"I could cite many more examples.

"It seems to me that the fears expressed by the classical authors with re-

gard to scorbutic patients tainted with scrofula have been inspired by a pre-conceived idea.

"The same may be stated with regard to syphilis as to scrofula.

"I have remarked, however, that so long as scurvy lasts, and until it has commenced to decline, there is a period of arrest in the manifestations of syphilis.

"In one of my syphilitic patients, towards the end of an attack of scurvy, the skin of the hands and of the soles of the feet were covered by psoriasis, mucous patches appeared around the anus, and dry mucous tubercles in great abundance on the skin."

ART. 5.—On Scorbutic Sclerosis.

By M. A. LEGROUX.

(*Gazette Hebdomadaire*, No. 43, 1871.)

In October, 1871, M. Legroux presented before the Medical Society of the hospitals of Paris a patient who afforded a good example of the sclerosis peculiar to the last stage of scurvy, and which is a remote consequence of vast subcutaneous and intermuscular blood effusions in the limbs.

The history of this patient is as follows: He is thirty-eight years of age, of good general health, and follows the calling of porter. Up to the end of February, 1871, he had undergone, without seeming to suffer any bad effects, the privations attending the siege, the cold and the fatigues to which the mobilized national guards were exposed. At this period, however, in consequence of gradual debility, pains in both legs, and extreme apathy, he was exempted from duty. He then ceased from work, and spent his days seated upon a bench.

At the commencement of March he noticed for the first time the existence of prominent petechial spots of the color of wine lees, which were scattered over the external and anterior surfaces of two legs. In the course of five or six days this petechial follicular eruption became confluent, and extended from the malleoli to above the knee, and always on the external and outer surfaces. The eruption was accompanied by slight œdema of the legs. There was no fever, but weakness, with pallor of the skin, a jaundiced countenance, an increasing apathy, which, however, did not prevent him from seeking distraction without the house.

On March 12th, the earliest cutaneous ecchymoses, with effusion of blood into the thickness of the limbs, showed itself. It appeared first at the corner and middle part of the right calf, and afterwards at corresponding parts of the left calf, over an extent of from 12 to 15 centimetres. The limbs became harder and very painful. Eight days later similar ecchymosis and effusions appeared in the popliteal region. Here the swelling was very hard, the tendons of the biceps, semi-membranosus, and semi-tendinosus were inclosed in a resisting mass, in the centre of which they could be felt as stretched and immovable cords. At this time walking caused extremely acute pain. It was only with the support of two sticks that the patient, with his body bent almost double and his legs semi-fixed upon the thighs, could proceed for a short distance. A change of position caused severe pain, and the man could not sit down or get up without assistance.

The general condition did not correspond in intensity to the local manifestations of scurvy. The debility, though great, did not prevent him from going out of the house. The tissues were pale. The patient was anæmic, free from fever, slept well, and had a good appetite, and did not suffer from vomiting, diarrhœa, palpitation of the heart, or any tendency to syncope.

At the end of the month of March pains in the gums commenced. In the course of a few days these structures were swollen, and covered by more or less abundant red fungosities, which impeded mastication. The patient was then fed on soup and bread, dipped in wine. The teeth were not affected, and soon became loose. The breath was never fetid.

When it had arrived at this degree of intensity, the disease remained stationary for a time; the petechial eruption had then disappeared, the ecchymoses

had been gradually transformed, and had left in their places a brownish and bronzed tint of the skin; the two legs were still hard and infiltrated.

From April to August the patient, being urged by necessity, endeavored, in spite of his great debility and pain, to re-enter the service of the National Guard. He was soon exempted, on account of his affection, and he then undertook some light work, in order to gain some means. At last, in the month of June, he was employed to attend to the walls and sewers in the *Jardin des Plantes*. This occupation was little adapted for favoring the resolution of the effused scorbutic material, and after a few days the pains were as intense as ever, and the man found that he could not walk or even stand. He was then admitted into *La Pitié*, under the care of Prof. Lasègue. The following was his condition at this time:—

Face of a light brown color; decubitus dorsal; the legs semi-flexed upon the thighs; the pulse slow, 68 to 72 in the minute; temperature normal; both legs and the posterior and inferior parts of the thigh were indurated both superficially and deeply; the integument was of a brownish tint, smooth, soft to the touch, and generally cold; pressure with the finger caused pain, and when it was prolonged and forcible left a slight depression, which disappeared slowly. It was impossible to pinch the skin between the fingers, or to make it glide over the subjacent parts, so closely was it incorporated with these. By closing the eyes one might imagine that he touched the limbs of a marble statue heated by the sun.

The most striking symptom was the considerable atrophy which the limbs had undergone. The right leg particularly was reduced, and the prominence of the calf had almost disappeared so that the limb was regularly cylindro-conical. The left leg was less atrophied at its upper part. By making comparative measurements of the circumference of the two limbs at the most contracted portions of the limbs just above the malleoli, and also round the calf, it was found that the right leg measured 39 centimetres, 6 millimetres above, and 30 centimetres 2 millimetres below; the left leg at the corresponding point measured 33 centimetres, and 35 centimetres 5 millimetres.

Around the malleoli, on each side, the skin was indurated and had lost all its suppleness and mobility. In the popliteal regions, both on the right and left sides, there was similar induration of the tissues.

Movements and locomotion were difficult. The patient experienced a sensation of tension and a peculiar constriction in the muscles of the calf when he endeavored to flex or extend the toe. The movements of the toes were also much restricted, especially of those on the right side. Extension of the legs was painful and imperfect.

The subcutaneous venous network was invisible. The temperature of the two limbs was equal. Cutaneous sensibility to pricking and the contact of hot and cold bodies, though impaired, was yet sufficiently distinct for the patient when his eyes were covered to indicate correctly the points where he was tried, and the manner in which it was done. No sensations of formication or of numbness were experienced by the patient.

Strange to say, in spite of this induration of the tissues constricting the leg, and of the consequent obstruction of the circulation, there was no œdema of the feet or the lower portions of the limbs.

On August 24th the man presented no symptoms of scurvy, save some fungosities on the gums and ecchymosis of the palatine mucous membrane.

On October 27th, at the end of two months' treatment, there was marked amelioration. The fungosities of the gums and the ecchymosis had disappeared; and the patient's strength had been nearly restored. The movements of the legs and feet, although still restricted and attended with stiffness, were performed without pain unless too much prolonged. The atrophy of the limbs was not so marked; the left leg was softer and larger; the right leg was still small and hard, but there had been a marked improvement since the patient's admission into the hospital.

The treatment was as follows: application of compresses saturated with a concentrated solution of hydrochlorate of ammonia; alkaline baths, lemon-juice, potassio-tartrate of iron, quinine, and an abundant diet.

The following remarks were made on this case by M. Legroux.

"This case is remarkable on account of the sclerosis which existed in the lower extremities of the patient. I say sclerosis, and not scleroderma, because it was not the skin alone that was affected, and also because it is necessary to avoid confounding this condition with the lesion which characterizes true scleroderma—a special affection with a sudden commencement and progressive course, and one which ought not to be classed with various affections which have nothing in common with it save induration and retraction of the skin. None of the numerous characters of this affection are to be met with in cases of scorbutic sclerosis.

In my patient the scurvy was remarkable in this respect: it had a very slow course, commencing in the month of February and not altogether disappearing before the month of October. It lasted then for nine months. Can this slowness be accounted for by the absence of all treatment until the month of August? I should have been inclined to think so had I not observed that the affection was mild at its commencement and that the various manifestations succeeded each other after long intervals, instead of occurring rapidly, as is usually the case in the early weeks of the attack. This, therefore, I consider to be a mild and chronic variety of scurvy.

"I would remark that the fungosities on the gums were not produced until a long time after the first appearance of the symptoms. It was not until the 30th of March that the patient first perceived them. This, added to other cases which I have observed, proves to me how far scurvy is from being a regular affection, and that it cannot be described as a disease with rigorous periods, in which the symptoms succeed each other with regularity, and in a constant order.

"Effusions of blood into the deep-seated tissues at points almost always analogous in all patients, correspond to a determination set up by the patient's habits or by accidental circumstances. In the patient in question, the blood was poured out only about the ankles, and on the legs and popliteal spaces. But this patient, in spite of his debility, continued to move about and to walk. Then when walking became difficult, he rested, seated on hard benches, and the posterior parts of the thighs were subjected to a pressure which was very unfavorable to the circulation; it was then that the effusions occurred in the popliteal spaces. In no other part was blood poured out. Weight in one part and pressure in the other had in this case acted as determining causes of the localization of the interstitial hemorrhages.

"In addition, I would remark with regard to the individual predisposition to subcutaneous and deep-seated effusions, and to the prolonged induration to which these give rise, that my patient had a skin naturally fine, white, smooth, and with few hairs. I have already noticed in many cases this coincidence of a fine and delicate skin with these obstinate scleroses, and I think that we have here a condition favorable to manifestations of this kind.

"It is supposed that the sclerosis consecutive to blood effusion is caused by an infiltration of fibrine into the tissues; the blood, being excessively charged with this material after having been partly absorbed, leaves behind a solid mass, which fills up the cellular spaces of the tissues. The small veins, having undergone a complete or partial obliteration, present a condition which impedes and retards the absorption of the effusion.

"If, in conclusion, we consider the etiology of scurvy, we see that in this case the patient, who had been exposed to excessive cold, had suffered from want of sufficient food. For a long time he had taken only broth and dry legumes. With him meat was rare. He had a mouthful only every five or six days. He did not want for wine. Every day he drank a litre or a litre and a half. He existed for a long time under these deplorable alimentary conditions, but it was only after the cessation of the investment that he became ill and that scurvy manifested itself outwardly. It is certain that if he had been treated properly in February and March, and had not with quite an Oriental indifference waited for a spontaneous cure, the course of the scurvy might have been averted."

ART. 6.—*On the Nutrition of Muscular and Pulmonary Tissues in Health and in Consumption, with Remarks on the Colloid Condition of Matter.*

By WILLIAM MARCET, M.D., M.R.C.P.

(*Edinburgh Medical Journal*, February.)

The following are the conclusions given by the author as the result of his elaborate researches :—

1. Phosphoric acid and potash may be prepared artificially in the colloid state, by dialyzing a mixture of chloride of potassium and phosphate of soda.

2. Wheaten flour, potato, and rice are found to contain, respectively, nearly the same proportions of colloid phosphoric acid and colloid potash, compared to the total quantities of these substances present; and these same proportions of phosphoric acid and potash are occasionally found to exist also in blood.

3. Plants form colloid material, although they may find some ready prepared, or in process of preparation in the soil.

4. Muscular tissue in health is formed of three classes of substances : (1) Those which constitute the tissue proper; (2) Those destined to become transformed into the tissue proper, and to make up for the waste; (3) Those which are in process of elimination—the first being solid and colloid, the second fluid and colloid, and the third soluble and crystalloid; the phosphoric acid and potash in the third class of substances, occur precisely in the proportions required to form crystalloid pyrophosphate of potash. This is invariably true for the flesh of animals highest in the scale; but in the salmon the proportions do not quite agree with those of the above compound, which appears to show that the material in progress of elimination is somewhat less crystalloid in fishes than in the flesh of the higher animals, and this would account for an accumulation of effete matter in the salmon.

5. Blood corpuscles appear to take up albumen, phosphoric acid, and potash in the blood, and yield them in the proper proportions to muscular tissue for its nutrition; but this subject requires further investigation.

6. The nutrition of pulmonary tissue in health differs from that of muscular tissue, inasmuch as the proportion of phosphoric acid to the albumen in the tissue proper, and consequently also in the nutritive material, is much higher in the lungs than in flesh; and that of the potash in the effete material is much higher, proportionally to the phosphoric acid, in pulmonary than in muscular tissue. The excess of potash is apparently eliminated under the form of carbonate.

7. The nature of the chemical changes which take place within muscles in consumption is the same as in health, but these changes are lessened in degree, the amount of nutritive material supplied being diminished. Moreover, there appears to be in muscular tissue in phthisis a beginning of that separation of water from the solids which, under other circumstances, only occurs some time after death.

8. Muscular tissue in consumption contains more soda and chlorine than in health; in the mean proportion of 0.117 of chlorine and 0.239 of soda in health, to 0.385 of chlorine and 0.446 of soda in consumption, for 200 grammes of flesh; showing apparently that the physical power of diffusion which had been kept in abeyance in health begins to act in phthisis.

9. The pulmonary tissue in phthisis, when consolidated and softening, still undergoes a process of nutrition; but this phenomenon is different from that which occurs in health, and becomes remarkably like the nutrition of muscular tissue.

10. The pulpy state of tubercular lungs in the softening condition appears due to an altered relation between the water and solids, and not to a fatty degeneration. The diseased organs, moreover, contain less colloid and more effete or crystalloid material than in health, these several phenomena showing, as in the case of muscles, a commencement of physical change.

11. Finally, death from consumption, when not due to asphyxia from deficient action of the organs of respiration, is apparently owing to the physical power of matter overcoming the phenomena of life, the nature of which is still a mystery, physical changes actually commencing before life is extinct.

ART. 7.—*On Scrofulous Angina.*¹

By M. ISAMBERT.

(*Gazette Hebdomadaire*, No. 47, 1871.)

Scrofulous disease of the throat is essentially chronic, almost indolent, and unaccompanied by glandular complications. It generally escapes observation so long as it is limited to the stage which M. Bazin calls scrofulous catarrhal angina, and of which the symptoms are these: A gutturo-loud voice, deafness, humming in the ears during phonation and coughing, loud snoring and choking during sleep, etc.; examination of the back of the mouth reveals hypertrophy of the tonsils, redness, tumefaction, and a granular condition of the pharynx and of the isthmus faucium. M. Isambert thinks, however, that hypertrophy of the tonsils is not always connected with the scrofulous diathesis, and M. Lasègue agrees with him. With regard to glandular angina this very often differs in no way from the follicular hypertrophies of herpetic, arthritic, or tuberculous subjects.

At last the stage is attained in which is presented a particular character which, according to M. Isambert, is special to scrofulous angina; this is a slight degree of ulceration, or only an erosion of the pharyngeal follicles. These small glands seem to be open at their summits, so as to expose a grayish-yellow and fatty-looking base. These follicular erosions may be observed on pale and anæmic mucous membranes, which are traversed only by a very fine network of capillaries. By this one may distinguish these erosions from the glandular pustules belonging to the follicular anginae caused by alcoholic drinks or tobacco, as the latter are always accompanied by a well-marked inflammatory redness and a varicose development of the small veins of the pharyngeal mucous membrane. In pulmonary phthisis the laryngeal affection attains its last stage; these erosions may then be observed upon a pale mucous membrane, but then the laryngeal and pulmonary phenomena, being very advanced, permit one to establish the difference in the nature of the affection. In scrofula, on the other hand, erosion of the pharyngeal follicles will appear precociously, and before severe lesions of neighboring organs.

The veritable ulcerations of the pharyngeal mucous membrane, which are due to scrofula, are not seated particularly upon the posterior wall of the pharynx, and this is a special character. In syphilis, on the other hand, the ulcerations appear upon the velum palati, the pillars of the fauces, and the epiglottis, before invading the back of the pharynx. Scrofulous ulcerations are irregular, have sinuous edges, and an unequal and shallow base. They are free from pain. The edges of the ulcers are not undermined, nor are they everted. The mucous membrane around the ulcers is more or less healthy, but presents sometimes an hypertrophic projection of the mucous follicles. This aspect of the mucous membrane separating the ulcers is rapidly ameliorated by a few cauterizations and topical treatment, whilst the ulcers themselves persist for a very long time.

The ulcers are very often covered by yellowish mucosities sometimes mixed with pus, and very adherent. Beneath these scabs the ulcers present a yellow tissue, which resembles fat, and is slightly irregular on the surface. In contrast to these scrofulous ulcers, syphilitic mucous patches are surrounded each by an external red zone, and the centres are prominent, and of a very characteristic grayish-blue color.

In support of the above assertions, M. Isambert gives several cases of

¹ Communicated to the Société Médicale des Hôpitaux of Paris.

scrofulous catarrhal angina, in which the characters just enumerated were observed.

According to his observations, M. Isambert thinks that syphilis has been too often incriminated in cases of extensive lesions of the velum palati (perforation, loss of substance, adhesions), and that it is only in instances where syphilis is engrafted upon the scrofulous diathesis that these may be produced as venereal disorders.

It is not always an easy matter to distinguish syphilitic lesions of the pharynx from scrofulous lesions, but in extreme cases the diagnosis is usually simple.

To resume: scrofulous catarrhal angina at its commencement is characterized by ulcers, the seat of predilection of which is the posterior wall of the pharynx, but these may present themselves also in the pillars of the velum palati, the opening of the Eustachian tubes, the epiglottis, and the arytenoid eminences. These ulcerations are painless, and are not accompanied by cervical adenitis. By these last characters they are clearly distinguished from syphilitic ulcers.

Moreover, scrofulous ulcers have not the opalescent reflection nor the carmine inflammatory zones of mucous patches. The scrofulous ulcer is of a yellow color, analogous to that of the celluloadipose tissue, and passes rapidly into normal mucous membrane. These ulcers are covered by muco-purulent scabs, and sometimes by whitish pultaceous products. In more serious cases one finds in the pharynx a layer of gray slough, which covers all the mucous membrane, and exhales a fetid odor. At the same time may be observed yellow pustules, acuminate like small furuncles. These malignant scrofulides may appear suddenly; still, deformities and abnormal adhesions of the velum palati which accompany them, often prove that there has been some unheeded pulmonary disturbance.

Whilst the use of mercury and iodine rapidly modifies syphilitic ulcers, this treatment aggravates scrofulous manifestations. Tonics and anti-scrofulous remedies produce at first rapid amelioration, but the ulcers are slow in closing. They are replaced by pearly-white cicatrices, arranged in lines. The adhesions of the velum, which result from their cicatrization, constitute deformities which surgery alone can remedy.

The deafness which follows scrofulous angina, and is due to obliteration of the Eustachian tube, seems to be incurable.

The complications which may supervene are hemorrhage, erysipelas of the pharynx, and œdema of the glottis.

The previous history and the concomitant lesions will always be of great utility in the diagnosis of scrofulous and syphilitic angina.

When syphilis is mixed with scrofula it becomes very difficult to recognize the share of each of these diatheses in the local affection, each of which is aggravated by the other.

The ulcers which are due to advanced tuberculosis cannot be mistaken for those of scrofulous angina.

Herpetism, arthritism, and diphtheria never give rise to lesions which can be confounded with scrofulous angina.

Cancer and epithelioma ought not long to be confounded with scrofulous ulcers. The fetor which the former give to the breath is permanent, whilst that caused by scrofulous angina is very rapidly relieved by treatment.

The treatment recommended by M. Isambert consists in the administration of cod-liver oil, iodine of iron and general tonics, and in the local application of tincture of iodine, either pure or opiated, or of chloride of zinc or chromic acid diluted. In cases of bleeding ulcerations the perchloride of iron may be employed. The patient may also inhale various powders, the most useful perhaps being iodoform powder mixed with lycopodium.

ART. 8.—*On the Uses of the Uvula.*

By Sir G. DUNCAN GIBB, Bart., M.D., LL.D.

(The Lancet, February 10, 1872.)

According to the action of the muscle it is an elevator; it is, moreover, a sentinel to the fauces, especially in the act of deglutition, for the moment that any substances come into contact with it, whether saliva, fluid, or alimentary bolus, it excites to action all the surrounding muscles, until it is got rid of and the passage clear. But it possesses a function of certainly not less importance in *holding the soft palate tense and firm in the mesial line against the wall of the pharynx during the act of deglutition itself*, and thus prevents the passage upwards of any fluid or solid substance into the posterior nares.

Whilst the uvula thus has its special uses in the act of deglutition, it exerts a not less decisive influence upon the voice when uttered in a very loud tone, or in singing the higher registers, whether contralto or soprano in females, and tenor or baritone in males; *then* is its character as a *levator* or shortener clearly exerted—a use indeed that any one can readily demonstrate in his own person who has sufficient command over the muscles of his throat to allow him to see it. If this power of shortening or elevation is impaired by the removal of the whole or greater part of the free exposed *muscular* end of the uvula, then are the singing powers so seriously damaged that instances are known where a professional life has been ruined in consequence. Indeed, every true singer is instinctively afraid of any measure being performed upon the uvula that will damage the true elevating muscular power which it is so well known to possess over the soft palate in association with the levator palati muscles.

In uttering the higher singing notes with the mouth open, not only is the uvula seen to be drawn upwards, so as to become almost invisible, but the soft palate is drawn backwards and upwards diminishing the space between its posterior border and the wall of the pharynx, so that nothing can occur to interfere with the passage of the expired air in its readiest and most conveniently harmonious manner through the mouth. The movements of the uvula are exceeding rapid, and vary with the continuous or quavering character of the singing notes; in the shakes of the notes it is seen to be undergoing a series of short *ups and downs*, and at every inspiration in singing it descends, and as rapidly ascends, and keeps up until the note, prolonged or otherwise, is finished. These observations have been confirmed by Sir Duncan Gibb over and over again upon some of the first vocalists of the day. In females who possess the very highest singing compass, the uvula and soft palate are small relatively, and so exquisite is the power over the uvular muscles that the very point can scarcely be recognised when the highest scale is reached.

On the other hand, Sir Duncan's observations upon the position of the epiglottis have shown that, if the expired air in vocalization is directed *behind* instead of in *front* of the soft palate and uvula, through pendency of the cartilage, thus diverting the course of the current of air, harmony, power, compass, and range of voice in singing are damaged most seriously. The elevating motor power of the uvula scarcely or not at all exerts itself, because the proper and natural respiratory influence is not exerted.

The uvula, therefore, besides the important functions it possesses in the act of deglutition, has also its special uses in regulating the voice, and this by no means in an unimportant manner. Here the author adds a few words upon *elongation of the uvula*. The true muscular end of the uvula very rarely indeed becomes elongated, but the terminal membranous end, containing mucous glands, and occasionally adipose tissue, does so frequently, giving rise to a set of phenomena which need not be described here. They are wholly removed by the operation of snipping off the superfluous membranous end, and no inconvenience has followed in Sir Duncan's experience of between four and five hundred instances. It is otherwise if a portion of the muscular end of the uvula is taken away; for if a single arch now exists as a consequence from one pillar of the

faucis to that of the opposite side, instead of the heretofore double arch, then is the singing voice altered, and in deglutition occasionally fluids, and even solids, get up into the posterior nares, thus proving the correctness of the views already enunciated, that one of the uses of the uvula is to hold the soft palate tense against the wall of the pharynx during the act of deglutition.

One of the effects of an elongated uvula, whether composed of membrane or muscle, is an unnatural drooping of the soft palate, which hangs upon the tongue, the power of the tensor and levator palati muscles being somewhat impaired. The constant dragging of the end of the uvula downwards in deglutition, which is continually occurring involuntarily, independently of the act of eating, is one at least of the causes of this; and that it is so is proved by the removal of the loose, flabby, membranous end, which is followed by the elevation again of the soft palate. The removal of the whole free muscular end of the uvula will not, in itself, give rise to a nasal twang in a speaking voice, however mischievous it may be to the singing voice. If a nasal twang is noticed coincidentally with such a removal, it will be found to depend upon some other cause altogether.

The speaking voice is modulated by the soft palate and uvula, and the motor power of the latter is unquestionably exerted in pronouncing the letters k, q, and x, with their associations, more especially the gutturals of various languages.

The uses of the uvula may be summed up as follows:—

1. It acts as a sentinel to the fauces in exciting the act of deglutition when anything has to be swallowed.
2. It compresses the soft palate, and holds its posterior free border firmly against the wall of the pharynx in deglutition, so that nothing can pass upwards.
3. It modifies speech in the production of loud declamation and the guttural forms of language, by lessening or diminishing the pharyngo-nasal passage, when it acts as an elevator.
4. Its elevating power is increased to the most extreme degree in the highest ranges of the singing voice, and is very moderately exerted in the lower ranges.
5. Therefore in its uses, deglutition and vocalization are the functions that are intimately associated with the uvula, and both become impaired more or less if it is destroyed, wholly removed, or seriously injured.

ART. 9.—*Pathological and Therapeutical Relations of Asthma, Angina Pectoris, and Gastralgia.*

By F. E. ANSTIE, M.D., F.R.C.P.

(*British Medical Journal*, November 11, 1871.)

Dr. Anstie advances the proposition that asthma, angina pectoris, and gastralgia are essentially dependent on neurosis of the vagus, which is of central origin, and in a large majority of cases is mainly or entirely due to inherited peculiarities of the central nervous system.

The following is offered by him as sufficient evidence, in his judgment, to make that hypothesis exceedingly probable:—

1. Inference from the known physiological functions of the vagus.
2. Evidence of the interchangeability of asthma, angina, and gastralgia, in the same individual.
3. Evidence of the pathological connection of these neuroses with neuralgia of the fifth nerve.
4. Evidence of the common dependence of asthma, angina, gastralgia, and neuralgia of the fifth, on peculiar inherited neurotic tendencies.
5. Evidence from the similarity of effects produced by certain remedies on all these maladies.

ART. 10.—*The Biliary Acids in Icterus.*

By E. A. GOLOWIN, M.D.

(Glasgow Medical Journal, February, 1872; Virchow's Archiv, vol. iii. pt. iv.)

Dr. E. A. Golowin has found that in a few cases of jaundice, the biliary acids were absent in the urine, and in one case, to which attention is more particularly directed, the jaundice was caused by obstruction of the bile-ducts by gall-stones. Some authors have tried to account for the absence of biliary acids in cases of jaundice in which biliary pigment was abundantly present in the urine, by supposing that the pigment resulted directly from changes in the blood-coloring matter, and was not at all referable to the liver, the name hæmatogenous icterus being invented to indicate this hypothesis. The occurrence of the case of jaundice, produced by obstruction of the bile-ducts, and in which there were no biliary acids in the urine, suggested that the simple long retention of bile might act on the hepatic cells, so as to incapacitate them for forming biliary acids, while the pigment was formed as usual, and it was thought that some of the supposed cases of hæmatogenous icterus might be in this way explained. With this view the author proceeded to perform certain experiments on animals, in order to determine whether retention of bile has the effect after a time of preventing the formation of the biliary acids. A biliary fistula was first made in a dog, and this was some time afterwards ligatured, so that obstruction was produced. A short time after this latter proceeding, it was found that though the bile-pigment was abundantly present, the biliary acids were not. So that this experiment supports the idea mentioned above. The author supposes that other causes besides prolonged retention of bile may cause the non-secretion of the biliary acids, and that there is no need to invent a hæmatogenous theory to account for the phenomenon.

ART. 11.—*Epidemic of Essential Jaundice.*

By M. DECAISNE.

(Medical Times and Gazette, February 3, 1872.)

M. Decaisne communicated to the French Academy of Medicine an interesting account of such an affection which prevailed last autumn in Paris and its environs. His personal experience relates to twenty-eight cases (occurring between Oct. 15th and Dec. 8th), seventeen being men from twenty-one to sixty-one years of age, and eleven women of from seventeen to forty-five. With the exception of five of the cases, the disease appeared in the midst of health, and without apparent cause, the icterus first affecting the sclerotica, and spreading over the body in the course of four or five days. The *velum palati*, in almost all the cases, was of a uniform yellow. There was no fever or diminution of appetite; no pain or tenderness whatever was experienced in the hypochondrium. Under the use of mild aperients, or even mere expectation, the affection passed away in nine or ten days. In five of the cases there was much pain in the loins, itching all over the surface, desire to vomit, and obstinate constipation—symptoms which soon yielded to mild purgatives and abstinence. The persons attacked pursued different occupations, and were placed under different hygienic conditions. Many soldiers, also, of the regiments encamped around Paris, the sanitary condition of which was excellent, also suffered just in the same way. They applied for advice, in fact, not feeling ill, but on account of their yellow color.

ART. 12.—*On Tympanitis and its Treatment by Puncture.*¹

By M. PIORRY.

(Gazette Hebdomadaire, No. 41, 42, 1871.)

M. Piorry, in referring to a communication made on this subject by M. Fonsagrives, declares that he cannot agree with the Montpellier professor in his opinion concerning the freedom from danger of abdominal punctures in the treatment of tympanitic affections. Without speaking of the small puncture made by the trocar in the stomach or intestine, a wound which in itself is not attended with much danger, he considers that an accident, the direct result of the small opening into the alimentary canal, may take place, which is very often followed by death in the course of twenty-four hours; this is the penetration of the fluids contained within the canal. What hospital physician has not seen one of these unfortunate cases in which an opening, caused by the ulceration of Peyer's patches, often so small as to be discovered only with great difficulty after death, has been followed by the passage into the peritoneal cavity of fluid material and of gas in such abundance as to distend the peritoneum to the point of preventing the descent of the diaphragm, and so putrid as to cause almost immediate poisoning of the patient?

Almost all facts and all analogies, gathered either from medicine or from surgery, seem to contra-indicate the employment of puncture practised for the purpose of remedying an extreme accumulation of gas in the intestinal tube. If indeed one could make sure practically and scientifically that adhesions existed between the parietal peritoneum and that which lines this or that part of the digestive tube, punctures performed at these adherent points would be of immense utility in cases of excessive accumulation of gas in the intestine; but unfortunately this is not the case, and probably out of the fifty successful punctures made upon the patients mentioned by M. Fonsagrives, the last forty-nine were made at a point where the peritoneum was fixed by false membranes to the alimentary tube.

It might be asked, however, if one does not exaggerate the inconvenience of the passage of gas and fluid over the surface of the peritoneum? Facts and the smallest reflection will prove that these inconveniences are great. See what happens to the peri-rectal cellular tissue when fluid and gas pass into it from an opening in the rectum. Abscesses, the pus of which is infectious, and even in which necrosis or gangrene may be declared, are widely propagated, give rise to symptoms more or less severe, and sometimes to symptoms of septicæmia. With much more reason is a similar danger to be feared from the introduction of fetid gas into the peritoneal cavity.

With regard to man, direct facts and considerations derived from analogy, lead one then to condemn the practice of puncturing the abdomen in a very great majority of the cases of tympanitis. It has been defended by the reports of some cases in which it was successful, but no mention has been made of those cases in which death promptly followed this perilous operation.

In order to recommend the proceeding, advantage has been taken of those frequent instances in which it has been practised with success on herbivorous animals, whose abdomen was much distended by elastic fluids which had been produced from masses of badly digested barley, or by gas arising from fermenting vegetable matter, that is to say, by carbonic acid gas, which is much less dangerous than sulphuretted hydrogen as disengaged in man from animal substances contained in the alimentary canal. It is true that, in experiments made by M. Bouley on dogs, and even on horses, fatal results followed punctures of the digestive tube very much distended with gas.

In a second communication the fact was insisted upon that tympanitis is almost always secondary to some other affection, such as paralysis of the rectum,

¹ Communicated to the Académie de Médecine.

flatulent dyspepsia, stenosis, or contraction of the pylorus, or of some other part of the alimentary tube, etc. It is necessary to inquire carefully into its causes, and to treat these by appropriate means before having recourse to puncture.

ART. 13.—*On Diseases of the Œsophagus.*

By W. HAMBURGER, M.D.

(*Gazette Hebdomadaire*, No. 13, 1872.)

Dr. Hamburger still continues the publication of his lectures on the diseases of the œsophagus. After having established the principle of auscultation of the œsophagus, this skilful observer has now published a veritable monograph on affections of the œsophagus. In his fourth lecture he deals with ectasies or dilatations, ruptures, the formation of diverticula, and excentric hypertrophy. We cannot better prove the importance of this work than by analyzing one of its parts—paralysis of the œsophagus. By paralysis of the œsophagus, Dr. Hamburger understands a condition of the muscular coat in which the energy of the muscular fibres is enfeebled or entirely lost.

Deglutition through the pharynx and œsophagus depends upon five chief factors. It is dependent: Firstly, upon the histological integrity of the muscular fibres of the pharynx and œsophagus; secondly, on the integrity of the vagi and accessory nerves, the latter furnishing the motor fibres, without which there would be no action of the muscles of the pharynx; thirdly, on the normal action of the hypoglossal and facial nerves, which animate the muscles of the tongue and velum palati; fourthly, on the conservation of the action of the glosso-pharyngeal and of the sensory fibres of the vagi nerves, which, by their sensory excitation, produce the reflex action of deglutition; fifthly, on the integrity of the nervous centres, more especially of the medulla oblongata and the superior part of the spinal cord.

The lesions observed are seated in one or more of the different organs corresponding to these factors of deglutition, and the causes of the paralysis may be referred to a morbid change of those various parts. The most ordinary cause, however, is certainly some lesion of the nerve centres, such as apoplexy, meningitis, cerebral tumors, traumatic lesions, or, finally, atrophy of the roots of the different nerves indicated as essential to deglutition. The agony in several diseases is accompanied by paralysis of the œsophagus; and, in a general manner, affections which profoundly disturb the central circulation may lead to paralysis of the œsophagus. Such are the typhoid affections, which, during the stage of convalescence, necessitate the use of the œsophageal bougie. Paralysis may complicate constriction of the œsophagus; it has been observed also in lunatics who persist in their wish to be left to die from hunger. It may occur in syphilis when an exostosis is developed at the base of the cranium, or in the superior cervical region of the vertebral column. Alcoholism, diphtheria, chilling, rheumatism, traumatic shock, lead poisoning, muscular atrophy of varied origin are so many causes of œsophageal paralysis. Among the symptoms the author insists more especially on dysphagia, and on the phenomena revealed by auscultation.

Dysphagia presents numerous varieties, according as there may be an isolated or a compound paralysis of the œsophagus and pharynx. When the œsophagus alone is paralyzed, the pharynx may, by a strong contraction, perform deglutition. In partial paralysis of the pharynx deglutition becomes very difficult, and it is impossible in complete paralysis of the pharyngeal muscles.

In the mildest cases the patient feels that the food passes slowly. Thus, small alimentary boluses are more difficult to swallow than large boluses, which, under the impulsion of the pharynx, continue their course. Fluids pass better when drank in large quantities, or when they are stimulating, as spirits. Very often the alimentary boluses, by succeeding one another, determine deglutition. When there is anæsthesia of the pharynx, it becomes necessary to push onward the food with the finger in order to avoid suffocation, and when the muscles of the larynx are likewise paralyzed, the obstruction to swallowing is complicated

by suffocation, and the danger of the introduction of foreign bodies into the larynx.

Auscultation furnishes symptoms of the highest importance. When the muscular energy is diminished, the alimentary bolus in its intra-oesophageal course no longer presents the form of an egg, but takes a form analogous to that of a funnel, and the rapidity of deglutition is very notably diminished. On auscultation the sensation may be experienced of the passage of a more or less filiform and elongated body. This sensation may be experienced particularly when the pharynx is not paralyzed, and when the bolus is promptly passed on to the oesophagus. This special bruit may be readily heard in dying patients in the so-called sonorous deglutition; but if the pharynx be paralyzed, the pharyngeal gurgling can no longer be heard. By these symptoms and by the employment of the oesophageal sound a diagnosis may readily be established between paralysis and constriction of the oesophagus.

With regard to the progress of the case, it is necessary to distinguish paralysis of the oesophagus either as symptomatic or idiopathic. The latter occurs suddenly, and in most instances is temporary, but it may last for several months, and even a year. The course of symptomatic paralysis depends on the general affection, or the central or nervous lesions from which it originates.

The treatment must be guided by the recognition of causes. The paralysis in itself may be combated by various resisting means—strychnia, ergot of rye, and strong doses of arnica root. Blisters along the course of the oesophagus, hypodermic injections of nux vomica, and even of strychnine have been employed. According to Monro, electricity has given good results. Employment of the sound is often an indispensable palliative means for prolonging life.

ART. 14.—*Treatment of Hyperpyrexia.*

By HERMANN WEBER, M.D.

(*Medical Times and Gazette*, March 31.)

At a meeting of the Clinical Society on March 8th, Dr. Hermann Weber read a paper on a "Case of Hyperpyrexia in Rheumatic Fever," successfully treated by cool baths and affusions. The patient was a youth aged sixteen, who had rheumatic fever (first attack) in August, 1871. The affection of the joints was well marked, but not excessive. The temperature of the body varied between the ninth and twelfth days of the disease from 101.6° to 102.2° Fahr.; the pulse being 98 and 118; the respirations between 20 and 24. The lungs were free, and there was only the slightest indication of a murmur with the first sound near the apex. The medicinal treatment consisted of three grains of quinine three times a day. On the morning of the thirteenth day great restlessness, vomiting, excessive micturition, involuntary motions, delirium, tendency to coma, and lividity of face supervened, simultaneously with a rise of temperature from 101.6° on the previous evening to 108.2°, of the frequency of pulse from 118 to 148, and that of respiration from 22 to 56. The patient was then placed in a bath of 71° Fahr.; and affusions of water of the same temperature were made. The mental condition and the appearance of the patient rapidly improved already during the first ten minutes, and at the termination of thirty minutes, when he was removed from the bath, the temperature in the cavity of the mouth was only 101.8°, and further sank during the next half-hour to 98.8°; while the patient fell asleep, and began to perspire freely. In the course of the same afternoon, the temperature again began to rise rapidly—i.e., from 100.8° at 3 P.M. to 105.8 at 6.40 P.M. Pulse 148; respirations 38; slight delirium. The patient had then another bath with affusion, as in the morning, when the temperature further rose during the first five minutes of the bath to 106.2, but afterwards fell rapidly, the mercury receding within twenty-five minutes (the duration of the bath) to 101°, and during the following hours to 98°. After the second bath, without any further medicinal or hydro-therapeutic treatment, the disease took the course of a usual mild form of rheumatic fever,

leading to perfect recovery, leaving only a rather too long first sound. Dr. Weber repeated the view stated in a former communication to the Society: that the nature of these attacks was the same as in common heat-stroke or *insolatio*: and thought that the term hyperpyrexia, as employed by Dr. Wilson Fox, was more appropriate than heat-stroke, which conveyed the idea of causation by external heat. Acknowledging that hyperpyrexia was an accident which could occur in all febrile diseases, he maintained that it occurred infinitely more often in rheumatic fever than in any other disease; and, regarding the peculiarities of rheumatic fever, was inclined to ascribe it to the tendency to endocarditis and fibrinous deposits existing in this disease. He suggested that it might have a similar origin to chorea, and might possibly be due to minute embolism or to plugging of some small vessels in a certain portion of the nervous system, as the hypothetical centre of animal heat and chemical changes. As to prognosis and treatment, he pointed out that all cases formerly had a fatal termination when once the temperature had reached 108° Fahr.; but that the hydro-therapeutic plan, if early and energetically pursued, and with watchfulness as to the possibility of several attacks, gave great promise of a speedy cure, as shown by two complicated and yet successful cases published by Dr. Wilson Fox, the one by Dr. Meding, and the one by the author. Dr. Herman Weber alluded also to a difference in the action of the cold bath in this class of cases (hyperpyrexia) and in the pyrexia of typhoid or enteric fever, typhus, and other fevers of longer duration. While in the latter the baths, when given during the height of the disease, produce only a transitory reduction of temperature, which is followed sooner or later by a fresh rise, so that three, four, or even five baths may be required on each of several successive days, in the hyperpyrexias one or two baths may be sufficient entirely and finally to remove the complex of symptoms within less than twenty-four hours. He thought that this difference in the action of the plan in question pointed to a difference in the underlying pathological causes.

ART. 15.—On Inflammation and Fever.

By PROFESSOR MAURICE SCHIFF.

(*L'Imparziale*, Nos. 6, 7, 8, 9, and 10, 1871; *Gazette Hebdomadaire*, No. 6, 1872.)

Prof. Schiff in some recent lectures regarded inflammation from an unusual point of view. After an historical introduction he established that the discussion concerning the origin of inflammation and fever is actually limited to this one question: whether the nutritive disturbances in inflammation are primary, or whether disturbances of circulation are the original cause of the disturbances of nutrition. Inflammation may be considered as an alteration in nutrition, but as this alteration is in every tissue accompanied by disturbances of circulation, as these last are presented clinically as the earliest symptoms, and as the circulation is the most important support, if not the principal of the means of nutrition, it has been thought necessary to inquire whether all the phenomena of inflammation do not depend on primary disturbances of the circulation and blood-pressure.

In order to answer this question it is necessary to examine the circulatory disturbances observed in the course of phlogosis. Referring to the phenomena which may be observed microscopically in the web of the frog's foot, Prof. Schiff arranges in three series the interpretations afforded by those appearances. In the first place the initiation of the process is in the parenchyma, and the tissues possess a kind of polarizing property through which, in the normal condition, they exercise a kind of attraction for the arterial blood and repel the venous blood. The augmentation of the attraction in phlogosis would explain the initial acceleration and then the retardation and arrest of the blood current. This doctrine was started by Vogel and still counts many supporters. But according to physiology, if this theory were true one would observe simultaneously acceleration of the blood current in the arteries and retardation in the

veins; on the contrary it may seem that the phenomena of swiftness vary in the same sense in the two orders of vessels. Other pathologists, following Henle, attribute the phenomena of inflammation to a morbid change in the tissues of the vessels permitting an increased exosmosis, the primary consequence of which is compression and passive contraction leading to obliteration of the vessels, whence there results an accumulation of blood above the compressed part and consequent passive dilatation. This opinion may be readily dealt with, for sufficient exudation to explain the different phases of compression is not usually observed.

A third explanation is based upon physiology and not upon hypothesis; it invokes the action of muscles and small arteries and veins to render account of all the phenomena of acceleration, retardation, and even obstruction; but though the first stages of traumatic inflammation may be thus very well comprehended, one cannot explain all the facts of inflammation. One cannot, as many observers have wished to do, recognize stasis as the primordial phenomenon of inflammation; it must rather correspond to gangrene. This opinion is contradicted by numerous facts. Thus, in supposing it strictly true, it would be necessary to admit that vascular dilatation is passive and results from the *vis à tergo* of the blood current.

But Vogel has shown that this dilatation exists in the absence of any impulsion of the blood current, since in a frog's web separated from the rest of the body, and consequently deprived of circulation, one may still observe under the influence of smart irritation a certain amount of constriction in the small arteries followed by dilatation.

Besides, the phenomena present a much greater complexity than one would have supposed at first; thus constriction or obstruction may be absent at the commencement; when the frog's web is irritated with acids, there is, according to Saviotti, dilatation without previous constriction. Collodion and ether act in the same manner as acids; there is dilatation first and then constriction; stasis thus coincides with constriction. Ammonia produces these two phenomena in turns, and they succeed each other several times. Constriction and dilatation ought then to be regarded as independent of each other; one cannot in consequence admit the mechanical explanation which represents dilatation as the result of a peripheral obstacle.

In addition to the mechanical phenomena of dilatation and obstruction, an augmentation of the blood-pressure in all the vessels is observed in inflammation. This augmentation added to that of the rapidity of the current in the inflamed parts may even produce a venous pulse. To complete the series of observed facts it is necessary to add that the small vessels become more permeable, that they permit an increased diffusion of their contents, and that the white globules traverse the walls of these vessels. The red globules, according to Saviotti and several other observers, may also pass through the walls, and Schiff also has been able to observe this phenomenon.

The preceding phenomena are constant in inflammation, but in order to conclude that the vascular disturbances are solely the origin of the inflammatory processes, it is necessary to demonstrate that these suffice to produce the nutritive changes which are inseparable from this process.

This is the point examined by the Professor with some developments. As the blood presents an uniform composition in its entirety, one cannot conceive a general change which would produce inflammation at a single point, and it is necessary therefore to admit a local influence. A local change in the blood-pressure would not suffice to produce changes in nutrition. Experiments made by Schiff prove this last negation. In fact, this skilful physiologist ligatured all the veins save one in the limbs of cats without observing changes in nutrition, or inflammatory phenomena in the limb, the circulation of which had been so disturbed. In addition both carotids may be tied in man and in animals without causing any disturbance in the cerebral nutrition. Abnormal blood-pressure therefore is compatible with normal nutrition; consequently pressure is not the sole factor of nutrition. Inflammation has not its origin in disturbance of the circulation. It remains therefore to find out another factor of inflammation. Recalling the remarkable experiments of Vulpian, in which the tail of a

tadpole separated from the body continued to live and even presented granulations on the cut surface, Schiff adds curious facts as to the reunion of various parts entirely separated from the body for several hours; in these cases the separated part would itself help in the process of reunion, or else it would have acted as a foreign body; to resume, vegetation in the tissue may up to a certain point be independent of the circulation. Parts deprived of vessels afford proofs of this, such as the crystalline lens, which has no connection with the circulation. The study of nerve sections on the other hand shows that changes in nutrition may be independent of circulatory disturbances; indeed nerves receive bloodvessels along their whole course, and yet if one cuts through a nerve, the sciatic for example, at its origin, one will find in the branches very important changes in nutrition, whilst the circulation in the nerve-sheath remains the same. Moreover if the roots of the sciatic nerve be cut through between the ganglion and the spinal cord, the motor fibres alone degenerate, whilst the sensory fibres remain normal, as it is the ganglion which is here the trophic centre of the sensory fibres.

This fact, so characteristic of sensory nerves, is not an exception; all tissues have a special nutritive faculty, each seeks the materials conducive to its nutrition.

To resume: nutrition is a complex function; one cannot yet appreciate the importance of the factors which concur in the general aim of nutrition, or still less decide upon the particular origin of the disturbances of nutrition observed in inflammation.

Professor Schiff hesitates to pronounce in favor of the cellular theory, as he is not aware of any direct proof of this. He has been led, however, by a general study of the facts, to agree with this theory in the sense that it attributes nutritive activity to an energy inherent in every living organ.

ART. 16.—*On the Pathology of Scarlatina, and the Relation between Enteric and Scarlet Fevers.*¹

By JOHN HARLEY, M.D., F.R.C.P.

(*Medical Times and Gazette*, Dec. 23.)

In the first portion of the communication the author treats of the morbid anatomy of scarlatina, and gives the details of twenty-eight cases of his own observation. Of these, the greater number died on days ranging consecutively from the third to the fifteenth; the remainder died on the seventeenth, twentieth, twenty-fourth, twenty-ninth, thirty-third, forty-first, and sixty-ninth days. More or less albuminoid and fatty degeneration of the kidneys existed in six of the cases, and these died on the fifteenth, seventeenth, twentieth, twenty-ninth, forty-first, and sixty-ninth days respectively; the kidneys were healthy in the remainder. The pathological changes common (with a few exceptions, depending chiefly upon the time of the decease of the patient) to all cases are as follows:—

1. *The Formation of Fibrinous Clots in the Heart and Great Vessels during a Pyrexial Condition at any Period of the Disease.*—This is the commonest cause of death during the early stage of the disease. It is indicated during life by the reduction, often very sudden, of a full and bounding pulse of 120 to a dribble of 150 or 160 almost imperceptible impulses; and the failure of the heart's action is commonly attended with orthopnoea and delirium from obstruction of the pulmonary and cerebral circulation. On opening the body very soon after death, before it has lost a degree of temperature, and while the blood is therefore hot and fluid, the right heart will be found distended partly with dark blood, which coagulates on exposure—and partly, sometimes chiefly, with a large, firm, white, bifid clot, continuous through the auriculo-ventricular opening. Each portion is interlaced with, and firmly adherent to, the tendinous

¹ Abstract of a paper read at a meeting of the Royal Medical and Chirurgical Society, December 12.

cords and outstanding muscular bands of the cavity in which it lies; and each portion sends a rope-like prolongation into the orifice of the great vessel connected with the cavity in which it is situated—the one entering the ascending cava, and the other the pulmonary artery. These processes frequently occupy half the area of the blood-tubes, and are prolonged in ramifications corresponding to those of the bloodvessels, upwards into the cranial cavity, and laterally into the lungs. On withdrawing these partial casts of the great vessels, they may often be found nine inches long, and to have occupied vessels of the sixth and seventh degree of ramification.

2. *Marked Derangement of the Hepatic Function.*—The bile was examined in twenty cases. In five only were the characters of the secretion normal, and in these cases death occurred on the third, fourth, twenty-fourth, forty-first, and the sixty-ninth days respectively—days probably in these particular cases too early for the development, and too late for the persistence of any great derangement. In the remaining fifteen cases the bile was in a deteriorated condition. In two cases (10 and 15) the gall-bladder showed decided marks of inflammatory action, the coats being injected, and the mucous membrane rose-colored. In Case 10 there was a complete absence of bile, the mucous membrane being merely moistened with a few drops of colorless alkaline fluid. In three other cases the bile had a natural greenish-brown color, but it was greatly deficient, as was that of the remaining ten cases, in solid matters. Thus the specific gravity in none of the thirteen cases exceeded 1014, and the amount of solid matter in 1000 grain measures in no case amounted to more than 36.4 grains, or less than one-third of the normal amount. In one case there were only 11.1 grains of solid matter in 1000 grain measures of the bile. In the majority of the cases the bile was turbid from epithelial *débris*, on standing it became clear and transparent, and resembled pale urine. In all the thirteen cases there was a notable deficiency of biliary acids, and in two a complete absence. The coloring matter of the bile was present in every case, and as the fluid trickled over a wide surface it usually left a bright gamboge-colored tract. The contents of the intestines agreed with this condition of the bile. If, as rarely happened, the bowel contained solid fæces, it was of a pale ochre or sulphur color. But the fæcal matters were commonly fluid, grumous, or flocculent, often slimy, and of a pale ochre color. Such, also, were the characters of the stools before death in many cases.

3. *General Inflammation of the Lymphatic Glands*, usually confined to those of the neck, but occasionally extending to those of the extremities; of the spleen and mesenteric glands; and of the whole of the solitary and agminated glands of the alimentary canal, but commonly affecting only those of the fauces, and of the ileum and colon. The morbid appearances due to this general inflammation of the lymphatic system were remarkably uniform, and they were observed in every case. The tonsils and solitary glandulæ of the tongue, and the external glands of the neck, were perceptibly affected in every case. In several cases large buboes formed in the neck; in three (15, 21, and 22) these were associated with diffuse cellulitis, purulent infiltration; and in Case 22 the popliteal and axillary glands and their surrounding connective tissue were similarly affected. In these cases the glands themselves were slow to take on suppurative action, and although they were generally much enlarged and purple, comparatively few had softened centres. The spleen was enlarged in twenty-three cases, and in five of these (Nos. 9, 12, 14, 25, and 26) it was increased to nearly twice its ordinary bulk. In two others it was not examined; and in the remaining two cases (10 and 27, in which death occurred on the fifth and sixty-ninth days) it was of the normal size. The mesenteric glands were swollen and inflamed in every case. In cases 2, 6, 7, 8, 12, 19, 22, and 24, the mesentery formed a thickened, heavy, lobulated mass, and many of the glands were as large as walnuts or pigeon's eggs. In Case 13 (death on the seventh day) there was only slight swelling of the glands, whereas in Cases 26 and 28, in which death occurred on the forty-first and sixty-ninth day respectively, the enlargement still persisted. Even the small glands in the attached borders of the transverse and descending mesocola were found purple and turgid. The solitary glandulæ of the ileum were in a condition of psorentery—i. e., forming white granular and more or less

hard elevations, like a thick sprinkling of large sago-grains, upon the mucous membrane—in fourteen cases. In six other cases, the solitary glandulæ were only partially affected, the swelling was more diffuse, the glandulæ being only moderately raised, but they were always deeply injected, and in some cases had an abraded appearance. In three cases, in which death occurred on the eleventh, seventeenth, and sixty-ninth days of the fever, there was only very slight swelling of a few of these glands; and in four cases, in which death occurred on the fifteenth, twenty-fourth, twenty-ninth, and thirty-third days respectively, the glandulæ were altogether unaffected. The agminated glands of the ileum were more or less swollen and inflamed in every case but one (25), that in which death happened on the thirty-third day. In Case 21 (death on the seventeenth day from suppurating buboes in the neck), there was only very slight swelling. In all the other cases the results of inflammatory action were decided, and in many cases severe. The glands were commonly raised the eighth of an inch above the surrounding mucous membrane, than which they were always more deeply injected. In the greater number of cases the difference was very striking, the mucous membrane being generally pale, and sometimes thin and bare, while the agminated glands were of a vivid red or claret color. The inflammatory action was usually confined to the glands in the lower third of the ileum, but in three or four cases the whole of the patches from the jejunum downwards were affected. In some of the larger glands isolated foci of inflammatory action were occasionally observed. The interfollicular ridges were often the eighth of an inch wide, giving to the paler glands a spongy appearance; but these ridges were as often vascular, with fine hair-like turgid vessels, and in some cases they were prolonged into folds a quarter of an inch in length (see Cases 3, 6, 7, 8, 12, and 15, in which death occurred on the third, fourth, fifth, sixth, and ninth days). In two or three cases an almost bleeding gland had a softened abraded surface. The mucous membrane of the ileum was itself severely inflamed in two or three cases, and was covered by a thick, adherent layer of white opaque mucus. The solitary glandulæ of the large intestine were enlarged and inflamed in eight cases (Nos. 4, 6, 7, 9, 16, 17, 19, and 22). In one of these (9) there was acute desquamation of the mucous membrane of nearly the whole of the bowel. In another case (27), the cæcum was severely congested. In those of the remaining cases in which the large intestine was examined it was quite healthy. After taking the above-described pathological conditions into one general view, it appears that there is an increase of fibrine in the blood during an attack of scarlatina, and that death is likely to occur during the first week from its deposition in the heart and great vessels; that the condition of the biliary function is such as to lead to an outbreak of diarrhœa, if this has not already happened; that a latent enteritis, sometimes general, but commonly affecting only the solitary and agminated glands, exists in a high state of development during the pyrexial stage of scarlatina, and ready to declare itself openly upon very slight provocation; that this intestinal affection is only a part of a general lymphatic inflammation which involves the whole of the lymphatic system, including the mesenteric glands and the spleen, in one common action; and, further, that this condition may persist in some degree, either in the bowel or the mesentery, as late as the sixty-ninth day, and without any outward indication of its presence throughout. From this view one general conclusion is inevitable—viz., that the pathological changes accompanying an ordinary attack of scarlatina include all those of the first stage of enteric fever, and that the transition from one disease to another is but a natural pathological sequence, readily determined by any cause which may increase the intestinal irritation. The proofs of this interchange, or sequence, constitute the second part of the subject, and contain accounts of the following original observations: Case 29—Scarlatina. Convalescence on the thirteenth day. Relapse during sojourn in the hospital, with scarlet rash on the twenty-eighth day; fully developed enteric fever on the thirty-second day; and convalescence on the fiftieth day. Case 30.—Scarlatina. Convalescence on the nineteenth day. Relapse during sojourn in the hospital on the thirty-first day, followed during the next ten days by fully-developed enteric fever; convalescence on the sixty-fourth day. Case 31—Scarlatina. Convalescence on the thirteenth day. Discharged from the hospital on the

twenty-third day. Supervention of enteric symptoms on the thirty-seventh day. Readmission in a typhous condition, and suffering from grave enteric fever on the fifty-eighth day; convalescence on the eighty-first day. Case 32—Severe attack of scarlatina. Convalescence on the twenty-seventh day. Slight relapse, with a trace of albumen in the urine on the thirty-second day. A second relapse on the forty-first day, followed by diarrhœa, with hemorrhage from the bowel and pneumonia; and death on the fifty-first day. Case 33—Scarlatina. Convalescence on the twentieth day. Discharged from the hospital on the thirty-first day. Readmission, with fully-developed enteric fever, on the fifty-sixth day; and death on the sixty-fourth day. Extensive ulceration of Peyer's patches. Case 34—Scarlatina. Convalescence on the twelfth day. Relapse during sojourn in the hospital on the twenty-seventh day. Development of enteric fever on the thirty-second day; and death on the fiftieth day. Extensive ulceration of the solitary and agminated glands. The author next gives a series of cases to illustrate the coexistence of the two diseases; and he concludes as follows: "The intercurrent or sequence of scarlatina and enteric fever has been frequently noted, and always attributed to accidental coincidence. In my article on 'Enteric Fever' in Reynolds' System of Medicine, I have expressed my convictions on the subject; and so strong were they in the natural sequence of the diseases at the time that work was publishing, that I find I have in the proof-sheet called my contagious variety of enteric fever 'abdominal scarlatina.' I abandoned the term then because it seemed to me that the evidence which I had adduced to show the close relationship implied in it was insufficient to convince those whose opportunities of examining the question in detail were rare, and whose scholastic principles, moreover, would be shocked by such confusion of two diseases which are commonly considered to be specifically distinct. Now, however, that I am enabled to lay before the Society such full and complete evidence as is contained in the preceding observations, I will submit this term to the profession as a definite description of a disease which the practitioner will occasionally meet with. Nor will I allow this opportunity to slip me, but, in the interests of truth, will ask my fellow-laborers to go with me one step further, and to discard those transcendental ideas of enteric fever which make of it a disease *per se*, and to open their minds to receive what nature will then soon teach them—viz., that enteric fever and all its attendant phenomena may occasionally become a part of almost any other general inflammatory condition, specific or simple.

ART. 17.—*Abstract of a Clinical Lecture on Dropsy.*¹

By CHARLES MURCHISON, M.D., F.R.S., Physician to St. Thomas' Hospital, and Joint Lecturer on Medicine at St. Thomas' Hospital Medical School; &c.

(*British Medical Journal*, December 23.)

After noticing the general nature of dropsy, and tracing it to the osmotic circulation constantly going on in the tissues of the body, and between the vascular system and the serous and mucous membranes, Dr. Murchison said that the causes of dropsy may be reduced to two heads—(1) excessive venous repletion, and (2) diminished exhalation in one part of the body, leading to compensatory exhalation in another. "There are some other causes," he said, "which you will find mentioned, and which may contribute to the existence of dropsy: one of these is an altered condition of the blood. No doubt this may assist in the production of dropsy, as in anæmia or hydræmia, when the blood passes more easily through the membranes than in the state of health; still, in the dropsy of anæmia, you will find the heart at fault mainly: there is a deficiency in its propelling power. There is a general impression that, in renal disease, the dropsy is due to an altered state of the blood; but I shall give you

¹ Delivered at St. Thomas' Hospital on November 2d, 1871.

some reasons for a different conclusion—that the dropsy from kidney disease is to be explained by the second general cause which I have mentioned. Some writers speak of dropsy as sometimes having a nervous origin; and cases of dropsy, associated with paraplegia, and even with hemiplegia, have been recorded by Dr. Laycock of Edinburgh, in support of this view. But this cause of dropsy is certainly far from common. It is very important to remember the two main causes of dropsy, for the key to the whole treatment depends upon them."

Dr. Murchison then divided the forms of dropsy, from a clinical point of view, into three: 1. Partial dropsy, or dropsy limited to one part of the body throughout its course; 2. Dropsy which is first partial, but becomes general; and 3. Dropsy which is general from the first. The first form is due always to excessive venous repletion; and this over-distension of the small veins is the result of some mechanical impediment to the venous circulation. Dr. Murchison illustrated this by various examples, and called particular attention to the clinical characters of the dropsy due to obstructed portal circulation; viz., the beginning of the dropsy in the abdomen: the dyspnoea following, but not preceding, the ascites; the tendency to hemorrhoids, vomiting, and diarrhoea, or to hæmatemesis; enlarged spleen and varicose veins on the right side of the abdomen. "In the second form of dropsy, the swelling begins in the feet and proceeds upwards; and this also is due to excessive venous repletion, from obstructed venous circulation. But here the obstruction is in the central organ of circulation—most frequently mitral disease, or fatty heart, or dilated right side of heart, consequent on chronic bronchitis and emphysema. In the third form of dropsy, the swelling invades all parts of the body at once; and this is due to diminished exhalation in one part, leading to compensatory exhalation in another. This dropsy is almost invariably renal. Albumen is present in the urine. How is it that disease of the kidneys produces dropsy? On this point you will find great difference of opinion among different writers. In some works this question is rather evaded than answered; but the general view is, that in consequence of disease of the kidney, the blood becomes poisoned, and, as the result of this altered condition, the liquor sanguinis exudes. For example, Dr. Owen Reese, in the Harveian Oration a few years ago, made the remark that the retention in the blood of the urinary salts made the liquor sanguinis permeate the membranes with increased facility. But there is one very important objection to this view of the case—that, if it be correct, it is most remarkable that in the form of kidney-disease, in which of all others there is the greatest tendency to the retention of the urinary salts in the blood, there is little or no tendency to dropsy. I mean the contracted granular or gouty kidney, the peculiarity of which disease is, that the patients often die of uræmic coma and convulsions, with little or no dropsy. We must look, then, for some other cause of the dropsy. It is this: you get a diminished exhalation of water from the kidney; and hence dropsy is chiefly met with in those forms of kidney-disease in which the tubes are blocked up by diseased epithelium or inflammatory products (acute nephritis and fatty kidney)."

Dr. Murchison then made some remarks on treatment. "In the first place, one great object is to relieve venous repletion, which, in the case of portal dropsy, may be accomplished by purgatives, which cause a watery exhalation from the bowels. Another object is to remove obstructions to exhalation from the skin or kidneys by diaphoretics, warm baths, diluents, and diuretics. Thirdly, you must endeavor to stimulate compensatory exhalation from the skin and bowels. You will also find much good derived from tonics, such as iron."

Several cases in the hospital were commented upon as illustrating the above remarks, and the details were given of two cases now in the wards—viz., a case of ascites due to disease of the vessels, and a very remarkable case of general dropsy, in which there was no evidence of disease either of the kidneys or of the heart.

ART. 18.—*On the General Pathology of Virus and Virulent Affections.*

By M. CHAUVEAU, of Lyons.

(Gazette Hebdomadaire, No. 42, 1871.)

"Virulent granules ought not to be regarded as animated beings. *They are simple anatomical elements, indeed hardly anatomical elements.* There is no reason for considering them in any other manner than we do the analogous elements belonging to pure inflammatory lesions. If they differ from the latter it is not in *their form* or their other external characters, but exclusively by their intimate qualities or their active properties. All these granular elements have the same origin. All proceed from the same source. All belong to the generating material which has been described by histologists as the seat of the proliferation of the anatomical elements in the pathological new formations as well as in the normal tissues and liquids of the organism. *Nothing foreign to this maternal fundamental substance of the elements of the organism exists in the virulent processes.* This, at least, results from the actual facts observed by means of plans of investigation which we have now at our disposal. This it is important that we should retain. The rest, for the time, is indifferent. Call this fundamental substance *protoplasm, germinal matter, or blastema*; regard it as always having a limited cellular form, or admit that it may be broken up or agglomerated in masses, the contours and limits of which remain indeterminate. These are points which it is not necessary from henceforth that we should understand in order to accept the determination of the part which the collection of facts leads us to attribute to this formative material in the theory of virulence. Agreement between us is not necessary for the present, with regard to the question of knowing precisely to what corpuscles the virulent faculty may be attached among those which are developed in the substance of this generative material. It is in the granular bodies of the protoplasm that the virulent agents are to be met with. We will content ourselves provisionally with this general determination. Subsequently, this very solid basis will possibly allow us to advance to a more vigorous determination of virulent agents, and to a very close distinction of the corpuscles which play this important part. But we must resign ourselves to the admission that, for a time, the absence of positive facts forbids us from going beyond our present conclusion.

"This manner of considering viri is too much opposed to the current of ideas to which we have been habituated for some time not to excite some repugnance. To renounce the consideration of viri as parasites, to abandon this notion, so clear and so well defined, and above all, so seductive, concerning the nature of virulent affections, will seem hard to the host of those desirous of finality, even at the risk of finding themselves fixed in uncertainty and ignorance of scientific questions. Let these spirits be reassured, and console themselves; they will hardly be required to change their idol. To pass from the dignity of an animated being to the rank of an anatomical element is not a very great decline in the particular case which we are investigating here. What do I say? Is there not a superiority in the majority of cases on the side of the anatomical element? Consider that of the small spherical masses of protoplasm, to which is most given the name of leucocytes. If one of these be placed under certain conditions, shall we not see it undergo the most varied changes of form, just as occurs with one of those veritable microzoonites designated as *amœbæ*? Not only do the various parts which compose the body displace each other in producing the changes of form, but the whole organ is itself displaced, and is transported from place to place like a veritable animalcule. It may be seen to pass into the thickness of a membrane with which it is brought in contact (Recklinghausen); and if the membrane forms the wall of a pouch containing fluid, it will even traverse this membrane, and plunge into the fluid, especially if this latter is favorable to the preservation and the life of the leucocyte (L. Lortet). Follow this leucocyte under the conditions favorable to its multiplication, and you

will see it become the focus of an active proliferation, which will produce a considerable number of similar leucocytes by a proceeding very analogous to those which preside over the multiplication of certain inferior animalculæ. How many of the independent organic ferments manifest the characters of vitality with similar energy?

"In fact, anatomical elements—those at least which interest us here, that is to say, the elements which have for a fundamental basis protoplasmic material endowed with a generative faculty—comport themselves in their natural medium, the living organism, in such a fashion as to recall the manner of being of certain microzoonites. This is a point of contact from which general physiology will probably one day draw a conclusion capable of reviving the pretensions of the partisans of the views concerning parasitic viri. At this time we, in order to be logical, are compelled to put these pretensions, as much as possible, on one side.

"Concerning one other point, the reform of the ideas which I now oppose will probably be a very difficult matter. The sharply-defined characters which the virulent elements present with regard to *quality*, obstinately recur to the mind, and not less obstinately resuscitate the thought that these characters ought necessarily to correspond to the equally-marked differences in the manner of being of the *material*. Not only is one naturally indisposed to the admission that virulent material resembles inflammatory or normal material, but one is even disposed to resist the necessity of admitting the identity of objective characters in the various virulent substances. It is necessary, however, to regard the virulent element, that is, the granular protoplasm broken up or collected in a mass, as being in every part identical. Some day we may succeed in finding in the different virulent protoplasms specific characters which will differentiate them both from each other and from non-virulent material; but at the present period one must give up the discovery of any other characteristic save that which is given to them by their specific qualities.

"Besides, the identity of objective or material characters in substances or organules differing absolutely in their properties is a very common fact in the organism. The most remarkable example of this is the ovule, the fundamental cell. If one had to select from a collection of mammalian ovules the one upon which has devolved the noble destiny of becoming the chief of the animal kingdom, he would find himself singularly embarrassed. Indeed, the human ovum, the germ of man, absolutely resembles the majority of those which give rise to subordinate creatures. Is it astonishing then that the germ of variola is not distinguishable from that of glanders or syphilis? Another and not less remarkable example is that supplied by the cells which form the original lineaments of the body of the embryo. In what do these differ from one another? and yet they become transformed into very diverse anatomical elements. Some will form nerve-cells and fibres, others muscle, etc.

"I have concluded this study of the determination of the intimate causes of virulence. Let us resume what we have established in commencing to make necessary distinctions for circumscribing and rendering precise the subject of our researches.

"Among the contagious diseases there is a numerous category of parasitic affections properly so called, due to the presence of animals or vegetables which multiply by direct generation, or by alternation of form; diseases in which the animal or vegetable acts only by causing irritation and local destruction. In these diseases, if the parasites be very small, or of but slightly aggressive nature, or if they do not attack organs of major importance, their presence may be compatible with an almost perfect state of health in cases where the number of individuals is relatively restricted, and although the affection which they cause may be mortal when they exist in considerable numbers. As examples of this we have the trichina and the parasite of the silk-worm. No one would propose to admit these parasitic affections into the rank of virulent diseases.

"Another category of contagious diseases of parasitic nature composes the class of septic or septicoid affections which, in the actual state of science, ought to be considered as being produced by the rapid multiplication in the blood of

proto-organic ferments, the decomposing action of which on the nutritive fluids determines a kind of poisoning more or less grave according to the species and the individual conditions of the subjects attacked. These affections may complicate the virulent diseases properly so called, but they cannot be confounded with the last in respect to their nature, although there exist between the two kinds of affections the closest relations. It is in the field of research constituted by this order of contagious diseases that the great labors of Pasteur on putrid fermentation ought to find their application.

"Finally, the last category of contagious diseases comprehends the true virulent affections, our subject of study. These diseases are distinguished from the preceding by the fact that their intimate cause, or their agent of transmission, does not present the characters of a parasitic ferment.

"When one seeks to determine this intimate cause by the study of the physiological evolution of virulent elements, it will be found that the virulent activity is developed in, and confines itself strictly to, the generative material or granular protoplasm of the new formations which provokes specific irritation due to the presence of a virulent principle.

"In the humors to which this irritation gives rise, the virulent activity resides in the free granular particles proceeding from the above-mentioned generative material, and is held in suspension in the fluid.

"The virulent activity is altogether absent from the fluid portion of the humors. The plasma, or the serum in which the most virulent granular elements are present become quite inactive when they are deprived of these elements. These bodies then are the exclusive agents of virulence.

"With regard to the origin and mode of development of these agents, it may be said that the intimate cause of virulence resides in the specific properties acquired by the protoplasm of the elements which arise, and are developed on the contact of a virulent germ already endowed with these specific properties in producing similar germs."

ART. 19.—*Result of Experiments on Pyæmia.*

By J. BURDON SANDERSON, M.D., F.R.S.

(*British Medical Journal*, May 11.)

At a meeting of the Pathological Society, of London, May 7, Dr. Burdon Sanderson delivered an address on this subject. He began by relating his first experiments as to the effect of inoculating the lower animals with pyæmic liquids. In the autumn of 1867, he injected the purulent liquid contained in the ankle-joint of a patient, who had died a few hours before with metastatic abscesses, general suppurative arthritis, and intense septicæmia, under the skin in a dog and two guinea-pigs. The two guinea-pigs died within short periods (fifteen and twenty days), and exhibited symptoms of great intensity. Both had metastatic abscesses; but in one the lungs were already beset with minute nodules, resembling miliary tubercles. The dog lived seven weeks. In this case there were no secondary abscesses, but miliary tubercles of the liver and spleen. From one of the guinea-pigs, two others were inoculated, of which one died of pyæmic subcutaneous abscesses, without visceral disease; the other, which lived longer, had no abscesses, but tuberculous disease of the lungs. During the same winter, other experiments of the same kind were made, all of which seemed to show that, by the inoculation of pyæmic products, two sets of lesions might be produced; as an immediate result, metastatic abscesses, accompanied by a general typhoid state, which was often fatal; as an ulterior result, either disseminated nodules, at first hard, but afterwards becoming caseous at their centres, or interstitial induration—both forms of lesion having their seat chiefly in the lungs, spleen, and liver, but also occurring in other viscera.

Having stated these facts, which he said had even in 1868 led him to regard it as probable that the two forms of infective lesions—the tuberculous and the pyæmic—were connected together etiologically and genetically, he referred to another fact which resulted from experiments made in 1871, as to the existence

of bacteria in animal liquids, and the circumstances which determined their occurrence. These experiments had shown that, whereas bacteria could not be shown to be present either actually or in germ in the healthy liquids or tissues, or in the products of healthy inflammation, they were present potentially in pyæmic liquids; that is to say, that, whereas ordinary pus could be kept for days or even weeks free from bacteria, provided the precautions against "spontaneous generation" were observed, pyæmic pus could not be so kept, and, moreover, possessed the properties of at once determining the development of bacteria in any suitable liquid to which it was added. At that time he had concluded, as he now knew from insufficient observation, that pyæmic pus did not itself contain visible bacteria.

A short account was next given of certain researches made during last summer, in association with Dr. Klein, as to channels by which infective poisons were distributed from their centres of origin. Referring to the last occasion on which he had brought the subject of the intimate pathology of tubercle before the Society, and to the doctrine he had then advocated, that tuberculosis is an irritative overgrowth of a pre-existing tissue, he said it had then been shown that the process, in its disseminated or interstitial form, had its seat in a certain tissue, and this tissue had been termed adenoid or lymphatic—both words implying its intimate and special relation with the lymphatic system; but the precise anatomical nature of this relation had been imperfectly made out. No further progress was made till last May, when Dr. Klein came to England with the distinct object before him of co-operating in the investigation of this very question. The field taken up was the peritoneum; the reason of the choice being, that that membrane, and especially the omentum and diaphragm, had already been the subject of investigation, as favorite seats of tuberculosis. Those researches had not merely served to elucidate one or two anatomical facts of very great importance to the pathologist—e.g., the existence of a lymphatic system in the omentum and its distribution, and the mode in which the peritoneum communicates with the lymphatic system—but had rendered it possible to give an account which, so far as the peritoneum was concerned, was tolerably exact and complete, both of the normal process of absorption and of the changes which the absorbing tissues undergo when they are entered by infective agents.

In the course of these experiments, it was found that not only as regarded the property of any given peritonitis to assume the infective character, but as regarded the intensity of the infective results and their duration, there were endless varieties. In one set of cases, the secondary lesions were suppurative, the constitutional disturbance intense, and the fatal result rapid; in another, the lesions were vascular new growths, firm at first, afterwards becoming caseous, the progress slow, and the functional disturbance imperceptible. And then it appeared that in all those instances in which the pyæmia—i.e., the acute character—manifested itself, bacteria were present, not merely in the purulent liquids, but in the blood. Under these circumstances, attention was directed from the effects to the poison itself. Soon after the opening of the Brown Institution, it was found that the practice of the hospital for animals was likely to afford the required material; in short, the pyæmia occurred in dogs under circumstances very similar to those which determined it in human beings; and exhibited similar symptomatic and pathological aspects. A series of experiments were therefore commenced in January last, having for their object to acquire a knowledge of the morbid poison, and particularly to discover by what conditions the variations of its intensity were governed.

With reference to these experiments, Dr. Sanderson would not anticipate the complete account of them in the Report of the Medical Officers of the Privy Council, but would confine himself to giving an account of one series, and exhibiting the action of the pyæmic poison during life, and the post-mortem appearances; but before doing so, he would state shortly what he understood to be the signification of the term pyæmia. He then proceeded to say:—

"The word pyæmia is apt to be used in somewhat different senses, according as the person using it has before him the medical or surgical aspect of the disease. To define it completely we must, I think, take into account its mode of origin, its symptoms, and the anatomical changes which it produces; not

confining our attention to either of these to the exclusion of the rest. With this consideration in view I would comprehend in my definition the following propositions :

"1. Pyæmia originates by the introduction into the living tissues, and eventually into the blood, of a *poison* which is itself a *product of inflammation*.

"2. The action of this poison manifests itself in an alteration of the blood, and in disorder of the vital functions. The former of these is characterized by the presence of bacteria, and by change in the optical characters of the blood, which often becomes obviously more transparent and darker by reflected light than it is naturally. Of the latter, viz., the general disorder of the vital functions, the most prominent phenomenon is fever, which, in the more intense forms of the affection, is followed by collapse which culminates in death.

"3. More remotely, the disease manifests itself in secondary suppurations—i.e., in the formation of metastatic abscesses, which may occur either in the internal organs or underneath the skin. The special characters of these metastatic (as I am in the habit of calling them) infective abscesses are those which are well known both to surgeons and physicians. They have the additional less known character, that the pus they contain is full of bacteria.

"Pyæmia differs from tuberculosis in the rapidity of its progress, and in the obvious character of the anatomical changes of which it consists. Whereas by tuberculosis we are understood to mean anatomically the overgrowth of cells in certain tissues, which we designate lymphatic on account of their proved anatomical relation to the lymphatic system, the secondary inflammations of pyæmia result in the formation of infective abscesses.

"Pyæmia resembles tuberculosis in its mode of origin. Both spring from inflammations; and so far as relates to the anatomical characters of the lesions, both are inflammations. To both, therefore, the term secondary or infective inflammation is applicable.

"So much for the disease itself. Let me now," said Dr. Sanderson, "draw your attention to the nature of the poison. I wish to show (1) that every pyæmic abscess contains a poison, which, when introduced either into the circulation or into a serous cavity, produces the symptoms of pyæmia; and (2) that we have this poison so entirely in our possession, and so far under control, that beginning with an agent so mild in its action that it produces no marked symptoms, we can convert it into an agent of such intensity that it kills in two or three hours with the formidable symptoms seen in the case we have now before us.

"This intensification is effected by a process which may be called cultivation. Dr. Klein made the important discovery that, if a pyæmic liquid were transferred to the peritoneum of a guinea-pig, and allowed to remain there for a couple of days, although it did not at first produce any intense symptoms in the animal itself, its toxic intensity increased in such a degree that, when the transudation-liquid produced in this was injected into another animal, it had acquired the most deadly activity; and that all such extremely active liquids were crowded with bacteria of a particular character, the increased number of which seemed to be in proportion to their toxic properties."

Dr. Sanderson then proceeded to exhibit a dog, into the abdominal cavity of which six drops of a pyæmic transudation-liquid had been injected three hours before. The animal was in a state of profound collapse, accompanied with vomiting, purging, and cramps of the extremities. Shortly afterwards, the animal was killed and the abdominal cavity opened. The peritoneum contained liquid slightly stained with blood, which, on microscopical examination, was found to be crowded with bacteria. The intestines were distended with a frothy liquid, which possessed none of the characters of the natural contents which had been found in other cases to be charged with shed epithelium. The internal surface of the whole of the alimentary canal from the stomach downwards was intensely infected, and presented appearances which (as had been found by more careful investigation in previous cases) were due to the separation of the epithelium from the surface of the mucous membrane, and the infiltration of that tissue with liquid.

The material which produced these results was obtained as follows: Pus from

a pyæmic abscess of spontaneous, i.e., accidental, origin was introduced into the peritoneal cavity of a guinea-pig and allowed to remain there for two days. It was then withdrawn from the guinea-pig, and some of it at once injected into the peritoneum of a dog. The dog was affected in exactly the same way as the animal exhibited to the Society. The remainder of the liquid was kept for five weeks in hermetically sealed tubes, after which six drops were injected into the peritoneum of a guinea-pig; this showed its action to have become relatively feeble. After two days, the transudation-liquid produced was (on the day before the meeting) tested with a third guinea-pig, and found to be extremely active. This afternoon it was injected into the peritoneum of the dog exhibited.

Dr. Sanderson then concluded by saying—"Such are the facts. The all-important question remains—Do these experiments concern us as physicians and surgeons or not? I think they do. But what I want is to prove it; for I am well aware that, unless clinical observation come in aid of pathological experiment, the results of the latter do not tell practically. Let me state what are the lines of inquiry which I desire to see taken up. The first question is—Do the characters which we have shown to be present in the products of acute secondary inflammation in the lower animals, also exist in similar products in man? The second is more important still—Can it be shown that human pyæmic products, when tested by inoculation, possess exactly the same morbid properties as those which are possessed by the liquids to which our experiments relate? It is for answers to these inquiries that I earnestly ask the assistance of hospital surgeons.

"Finally, I would say a word as to the limits of the question now before us. With regard particularly to the question of bacteria, I desire to keep to the bare facts of disease, and not to diverge into discussions as to their origin. It is a matter to me of comparative indifference how they originate. Our observations lead us to conclude, first, that they afford a *characteristic* by which we may distinguish the products of infective inflammations from those which are not infective, and that their number affords an indication of the degree of infectiveness; and, secondly, that their presence in the blood is an indication of that constitutional disturbance which accompanies infective inflammation; not merely when that disturbance assumes the degree of intensity of which we have an example before us, but in the slighter form of irritative fever. If these facts prove to be true, not only in the lower animals but in man, their importance is quite unaffected by any theory which we may entertain as to the origin of bacteria."

The President said that the subject was a very important one. It seemed to him that Dr. Burdon Sanderson had entered upon a large area in a wise, clear, and distinct manner; and, although it might not be possible to assent entirely to his ideas, there seemed to be a clearness about the experiments. It was a striking fact that five or six drops of this peritoneal fluid should produce upon a dog the effects that had just been seen.

Dr. Crisp objected to Dr. Sanderson's conclusions respecting the identity of human and brutal diseases, and particularly to the similarity of consumption in animals and in man. As to the existence of bacteria in large quantities in the pyæmia produced by injecting peritoneal pus into another animal, he had seen them in as great number in other diseases—e.g., in splenic apoplexy. The pyæmia of man occurred at a very variable time after operations and open sores; but in Dr. Sanderson's and in some similar experiments the exact time of death after injection in animals could be predicted. He therefore thought that the pyæmia of man, and the collapse produced by Dr. Sanderson, were perfectly distinct.

Dr. Bastian said that the facts brought forward by Dr. Sanderson were most important. He wished to ask Dr. Sanderson whether he saw in the blood of animals suffering from pyæmia real bacteria or only granules. In the present state of science this was a fundamental distinction. Again, the question arose, what relation did these bacteria bear to pyæmia as a disease? Were they to be regarded as causes of pyæmia or as consequences? Again, granting that bacteria existed in the blood in pyæmia, and that they were its causes, how did the contact of these bacteria cause pyæmic processes? Bacteria were con-

stantly in communication with open wounds and mucous surfaces; they existed abundantly in the mouth and back of the throat of every individual, and if they caused pyæmia nobody would be able to live. Then again, many experiments had been made in which fluids containing actual bacteria had been injected into animals and no disease had been produced. Dr. Bastian had injected several drops of fluid teeming with bacteria under the skin of frogs, and no disease had been produced. No one in this room, he supposed, would say that it was an habitual thing to find bacteria in the blood of persons dying of typhoid fever or rheumatic fever; and yet in both of these diseases where the temperature had been high during life, in a few hours after death bacteria had been found in abundance in the internal organs. He made a necropsy thirty-six hours after death on a case of typhoid fever dying in the University College Hospital, and found the vessels actually plugged with bacteria. How were those bacteria produced in the blood in these cases, granting that they were essential to the production of pyæmia? How was it to be supposed that the infection was brought about? On the other hand, in cases where the health suffered and where there was an open wound, there was always the likelihood of changes taking place in consequence of poisonous absorption through the wound.

Mr. Hulke asked Dr. Sanderson if he had not confounded pyæmia and septicæmia. It seemed to him that the dog suffered from the latter, and not from pyæmia. If perfectly filtered pus were injected into an animal, the ordinary symptoms of pyæmia were produced, and the animal recovered; but if the pus were unfiltered, these symptoms were produced *plus* others—such as multiple abscesses, constituting septicæmia. Any fluid, if putrescent, whether animal or vegetable, would produce the same result.

Mr. Spencer Wells asked whether Dr. Sanderson believed that the poison in this case would be physiological or chemical. There was a lady on whom he performed an operation. After he had partially opened the wound and inserted an elastic catheter, he removed an ounce of reddish fluid. This he sent to Dr. Richardson, and he prepared from it an alkaloid, one milligramme of which killed a rabbit. It had effusion into its peritoneal cavity, and a little of this killed another rabbit into which it was injected. A third was killed from the fluid from the second; and a fourth from the fluid from the third; but the fifth recovered after the injection of fluid from the fourth rabbit. The poison seemed to be like strychnine, and not due to anything like bacteria.

Dr. C. J. B. Williams thought that, as yet, no conclusion could be arrived at from Dr. Sanderson's experiments, important as they might be in themselves. He remembered a post-mortem examination in University College Hospital, after which the operator complained of a tingling and heat in his hands. The fluid in this case was examined and found to be intensely acid, and to contain many bacteria.

Dr. Murchison asked whether it were possible for pyæmia to originate in the body independently of any poison from without. On several occasions he had had the opportunity of examining the bodies of patients who had died of pyæmia following typhus fever, in which there were no ulcerated surfaces, no bed-sores, and no open wounds whatever. And yet in these pus had been deposited in the joints, under the skin, and sometimes in the internal organs. Every one who had observed epidemics of typhus fever must have seen that pyæmia followed many cases, and that when one case had occurred in a hospital there were many—possibly from the patients being too closely crowded, etc.

Mr. Henry Lee thought that Dr. Sanderson had established clearly that the products of inflammation differed very much from those of the putrid element. This last was much more fatal than that of a spontaneously originating inflammation, and the pus of a chronic sore was much less deleterious than that of an active inflammation.

Dr. Anstie had seen all the symptoms of pyæmia produced where there was no wound whatever, and where no putrid fluid could have entered the system. He had seen cases where the only assignable cause was a cold; and there were many cases of a like kind on record. There was a second class of cases in which there had been exposure to drain-smells and impure vapors. He remembered one case coming to Westminster Hospital from a particular club-house,

in which the underground premises were exceedingly unhealthy. A series of cases of a similar kind had come from the same house.

Dr. Cayley wished to know what effect the poisonous fluid had on the animal from whose abdomen it had been taken.

Dr. Sanderson replied shortly that, as regarded bacteria in general, he was well aware from his own experiments that the ordinary bacteria of putrefaction possessed no toxic action, and that liquids containing them could be injected into the circulation of living animals without result. As regarded the bacteria of pyæmic products, he had carefully guarded against the inference that they were the efficient causes of pyæmia. He regarded them only as characteristic inhabitants of infective liquids, and therefore very probably carriers of infection. As regarded the word septicæmia, he understood it to mean a state of the blood which was only present in the most intense forms of pyæmia; and he entirely agreed with Mr. Hulke in regarding metastatic abscesses as an accident rather than as an essential of pyæmic infection. The theory that the pyæmic poison was dependent on an alkaloid, would be disproved in case it should appear that it was incapable of diffusion. On this question, further inquiries were necessary.

ART. 20.—On the Perforation of Soil Pipes by Sewer Gas as a Cause of Enteric Fever and other Diseases.

By **ANDREW FERGUS, M.D.**

(*Glasgow Medical Journal*, February.)

As to remedial measures, Dr. Fergus suggests the following:—

1st. That all soil pipes should be carried up to the roofs of the houses, and left quite open to the external air; and, if possible, the soil pipe should also be used to carry off the rain-water from the roof. The landlords would be more than compensated for this expenditure by the increased duration of the soil pipes.

2d. Water for domestic use should be taken from the main.

3d. Where cisterns are still in use, a charcoal cage, to be refilled from time to time, should be placed in the overflow pipe; or, better still, the overflow pipe might be carried to the house, and not passed into any rain.

4th. All over the city, and especially at the higher levels, the sewers should be connected with the furnaces of some of our large public works. More than three years ago Dr. Fergus proposed that this should be done, so that all the foul air from the sewers might be burned.

But all these would be mere palliatives. Dr. Fergus holds that the only true sanitary solution of the question is, that provision be made that all excreta and organic refuse shall be kept out of the sewers and water-courses.

ART. 21.—On the Prognosis and Treatment of the Consecutive Nervous Affections of Typhoid Fever.

By **Dr. H. NOTHNAGEL**, of Breslau.

(*Deutsches Archiv für klinische Medicin*, Bd. ix. 4 u. 5 Aft. 1872.)

"These affections may be arranged in three divisions, as follows: Affections of the motor nerves, in which, however, in most cases, the sensory nerves participate; pure affections of the sensory nerves; and finally, affections of the vaso-motor nerves.

"Several cases of the first class of motor paralysis and paresis are reported, the structures affected being the vocal cords, the serratus muscle, the ulnar and peroneal nerve, and, in some instances, one or more entire extremities. Cases are also given of hemiplegia and paraplegia. The affections of the motor nerves sometimes take the form of muscular tremors, spasms, and convulsions.

"The pure affections of the sensory nerves are local anæsthesia, hyperæsthesia, and neuralgia. Amaurosis and auditory disturbances frequently occur after typhoid.

"As instances of the third class of nervous affections, Dr. Nothnagel alludes to reported cases of circumscribed atrophy of the skin, with deficient nutrition of hair and nails, and of circumscribed patches produced by loss of pigment.

"The *prognosis* of the nervous sequelæ of typhoid is almost universally regarded as favorable; and in the majority of cases this view is decidedly right. Almost all these varied affections either spontaneously, or under the influence of suitable treatment, decline in the course of weeks and months. Even complete paraplegia may be quite removed.

"Some few only of these nervous disturbances seem to attest a bad prognosis. Among these exceptions are cases of hemiplegia, which is, in almost all instances, due to deep-seated organic cerebral disease, generally apoplexy. Those few cases in which the hemiplegia is dependent on some other anatomical process are more promising.

"Those cases seem also to be unfavorable in which paralysis, even though of a single nerve, is associated with considerable impairment of nutrition; yet even here a cure may be brought about by conformable treatment. To the less favorable forms of paralysis, persistent paralysis of the vocal cords seems to belong.

"Finally, one must always seriously regard cases of impaired vision following typhoid, which has not been brought about through simple disturbance of accommodation. Experience has taught that this impairment of vision after typhoid relatively often leads to atrophy of the optic nerve.

"*Treatment.*—Experience teaches that many of the nervous affections that follow typhoid may, in the course of time, decline spontaneously and without any treatment.

"It ought to be set up as the first rule in the management of the case that the treatment should, to a great extent, be expectant, and that the practitioner, before all things, must avoid proceeding too energetically. It cannot be denied, however, that in many instances the course of the disease can be shortened by judicious and suitable treatment, and even that under certain conditions, complete recovery can be brought about only by these means.

"In the cases of paralysis, electricity is used most frequently, and does the best service. In the cases observed by me the inductive and constant currents were used promiscuously, but most frequently the latter. The paralysees which were localized to the district of certain nerve trunks and branches were treated exclusively by electricity. I cannot say that in these cases any great difference was discovered in the two kinds of current. This experience conforms to my view concerning the nature of these paralysees as especially traumatic; since even with the ordinary traumatic paralysis, according to the observations of others as well as my own, no very noteworthy difference is to be made out between the two kinds of current, especially with regard to their influence upon the rapidity of restoration. One electrode is generally placed upon the nerve trunk or on the plexus, the other on the paralyzed muscles.

"Cases of paraplegia require a treatment varied according to the probable nature of the case. If the paraplegia be regarded as due to spinal hyperæmia, or spinal meningeal apoplexy, that treatment may be first tried which in some reported cases seems to have been attended by a good and tolerably rapid result. This consists in local blood-letting along the spinal column and purgation; at a later period electricity may be brought into action.

"On other occasions, when the paraplegia is considered as due to general hydræmia with serous transudation into the serous canal, a course of tonic treatment will naturally be carried out.

"If no cause of this kind can be made out, two therapeutical procedures remain: baths and electricity.

"With regard to the effects of the former I have no personal experience; for these kind of cases, however, I should think that the baths of Teplitz,

Rheme, and Wiesbaden, are probably the best fitted, and occasionally the constant current.

"According to what has been stated above, cases of hemiplegia must be treated according to recognized principles, and with regard to their usual origin from cerebral hemorrhage.

"For cases of motor irritative phenomena a successful plan of treatment has yet to be found. Here neither the inductive nor the constant current has any effect.

"To the treatment of extensive anæsthesia those general principles are applicable which I have just given in my remarks upon paraplegia. When circumscribed anæsthesia requires special treatment, irritative ointments and the electric pencil constitute the most suitable means. For atrophy of the optic nerve there is of course no treatment.

"In some cases of neuralgia the application of the constant stream along the course of the affected nerve has a decidedly good result. With regard to cases of persistent hyperæsthesia of the feet I can give no experience of my own, and have been unable to obtain from the reports scattered throughout medical literature any decision as to a settled mode of treatment."

ART. 22.—*The Sanitary Aspect of the Sewage Question, with Remarks on a Little-noticed Cause of Typhoid Fever and other Zymotics.*¹

By ANDREW FERGUS, M.D.

(*Medical Press and Circular*, February 21.)

The more Dr. Fergus studied the subject, the more convinced had he become that the present system of water carriage is a mistake. Its inclosed rivers and streams are in many places nothing better than cesspools, and in proof of this the condition of the Thames, the Tyne, and the Clyde was adduced. On the banks of the last named river there are plenty of chemical works, but it was only after the rapid introduction of water-closets into Glasgow that salmon ceased to pass up the river. In Glasgow alone there are 32,500 water-closets discharging into the Clyde, and it is but a fair inference to deduce that these are the chief causes of the pollution of the river. In the author's opinion, the condition of rivers loaded with organic refuse in a state of putrefaction is not injurious to health. It is only when decomposing excreta are placed in narrow passages with a limited supply of air and water, as in our cesspools and sewers, that they become so. These sewers are connected with our houses by water-closets more or less out of repair and imperfect, and with fixed basins, some of them having merely pipes passing from the water-closets to the sewers. Trapping and ventilating sewers is injurious, inasmuch that if we trap in one place, we leave more to escape in another. Ventilation is not easy, and is very costly. Mr. Bazalgette estimates the ventilation of the sewers of London at 460,000*l.*, with an annual expense of 201,480*l.* for fuel, exclusive of labor. Trapping and ventilating merely dilutes the poison, and lowers the health of the surrounding inhabitants by contaminating the air. Sewage gas, always forming, is generally lighter and hotter than air, and being frequently in a state of tension, will ascend and escape at the highest point. After stating how ineffectual any present system of trapping was in preventing the escape of sewage gas into houses, and instancing various epidemic diseases originating from sewage gas, the author stated that fifteen years ago he first detected perforated soil pipes. These perforations were generally on the upper surface of the pipe, and the pipe usually affected was the cross one leading from the closet to the main descending soil pipe, and if there were an arch in the pipe the upper surface of the arch would be perforated. The author exhibited several specimens of perforated pipes, showing clearly that the destructive action was from within. Considering the results of chemical analysis, as well as the increased

¹ Read at a Meeting of the Edinburgh Medico-Chirurgical Society, January 17th.

rapidity with which this action takes place in pipes not ventilated, he believed himself justified in coming to the conclusion that the perforation was due to the action of sewage gas. He found on inquiry that the same state of things exists in every water-closet town. Lead being usually employed as the material for soil-pipes, it becomes important to inquire how long a good lead soil-pipe will hold out. In unventilated pipes the duration might be stated to be about twelve years; when the pipe is carried up to the top of the house, and open to the external air, the maximum duration is from twenty to thirty years. The practical conclusion upon which the author insisted was that in any house, however well built, when cases of typhoid fever, diptheria, etc., occur, the pipes should be thoroughly inspected, especially their upper surface, and the whole of the soil-pipe uncovered. Sewer gas may also prove injurious by passing up the waste pipe of the cistern, and becoming absorbed by the water. The plan of sewage irrigation Dr. Fergus considered would not in the least improve the sanitary condition of water-closet towns. The most perfect specimen of this system was at Croydon, but experience shows that the excreta are not passed first on to the land, and that the excreta must take much longer than from four to six hours, the theoretical time allowed to pass from the closet through pipes and over meadows. Again, if sewage is pumped, in all probability the liquid will be pumped up and the gas left, as confirmed by the results of drainage works in twenty-five towns in England. The result at which he had arrived was, that all excreta should be submitted to chemical or other action, by which they shall be rendered non-putrescible. After noticing the various plans which had been suggested for meeting the whole case, it appeared to him that the apparatus devised by Mr. Hoey supplying all the comforts and conveniences of the water-closet, gets quit at once of all the nuisance and dangers of that system, and the expense of altering a water closet to suit this apparatus would be 13s. The author has one fitted up in his own house, which works admirably.

ART. 23.—*On Dr. George Johnson's Theory of Cholera.*

By WILLIAM SEDGWICK, M.R.C.S.

(*The Lancet*, October 7, and November 11, 1871.)

In this paper Mr. Sedgwick exposes the error of Dr. Johnson's theory, and concludes with the following remarks:—

"As the chief importance of theories in disease is derived from the extent of their influence on practice, it has been necessary to notice somewhat more fully than would otherwise be the case some of the leading errors in this particular theory of cholera, in consequence of the attempts which have been made, through the medium of the non-medical press, to popularize the cathartic treatment which has been founded on it, and which has failed to gain the approval of the medical profession. The absence of any allusion in the late publications on the Pathology and Treatment of Cholera, by Sir Thomas Watson and Dr. Johnson, to the results of this treatment at any of the metropolitan hospitals, cannot fail to be regarded as a very significant fact. For, during the last epidemic of the disease in 1866, all the cholera patients admitted into King's College Hospital were under the immediate supervision of Dr. Johnson himself, and it is well known that the statistics of treatment on this occasion, showing a mortality of about 62 per cent.,¹ are too unfavorable for quotation. In the University College Hospital, during the preceding epidemic of cholera in 1854, eight of the patients were treated with castor oil; but as only one survived, the treatment in consequence was changed. And the committee appointed during this epidemic by the Medical Council of the General Board of Health, to consider and report upon the treatment of cholera by castor oil, ascertained 'that in eighty-nine cases of cholera treated by fourteen different practitioners with castor oil, on the plan recommended by Dr. Johnson, sixty-eight were fatal, recovery

¹ *Lancet*, November 17th, 1866, and August 19th, 1871.

having occurred in only fifteen cases, while the six remaining cases were still under medical treatment.' Similar, if not even still more disastrous, results have attended this practice in India; and it would perhaps be impossible to cite a more painful illustration of the failure of the cathartic treatment of cholera than that which is derived from the experience of Dr. Macnamara,² who 'was acting as house-physician to King's College Hospital in 1854, when (during the decline of the epidemic) Dr. D. Johnson was treating his cholera patients on eliminative principles.' Having sailed for India 'full of confidence and hope in castor oil,' Dr. Macnamara was left, he informs us, in the following year (1855) in sole charge of a field hospital at Bhaugulpore during a severe outbreak of cholera. There he 'went boldly to work with castor oil (both among the Europeans and natives under his care); but it absolutely and completely failed, and the mortality from the disease was fearful.' Notwithstanding this unfavorable result, he again tried it on several occasions, but subsequently the 'castor oil method' was abandoned as 'worthless.' Since, therefore, the cathartic treatment, which has been founded on this theory, has signally failed, it can no longer be of any avail, in the struggle to support the theory itself, to act the part of a master of fence, or to be prematurely praised as its 'triumphant advocate;' for the victory which has been claimed was virtually lost when the showy weapons relied on for defence had been proved to be unworthy of trust, and when the skill which might have been turned to good account had been wasted on a series of subtle feints, which may, perhaps, have delayed, but which could not ultimately avert, defeat."

ART. 24—*Treatment of Cholera by Subcutaneous Injection of Morphine.*

By JOHN PATTERSON, M.D., L.R.C.S., Surgeon-Superintendent of the British Seaman's Hospital, Constantinople.

(*Medical Times and Gazette*, January 27.)

Dr. Patterson states that a recent severe epidemic in parts of Constantinople and at Hasskien, a village on the Golden Horn, the residence of a large English colony, has given him an opportunity of trying the effect of the subcutaneous injection of morphine on a sufficiently large scale to judge of its value. The first cases were treated by the usual remedies; everything rational was tried, and with the usual want of success. Completely disheartened at the inutility of treatment, he went prepared with the instruments and morphine, and after consultation with his colleague, Dr. Werry, determined to give it a trial. A most unpromising case was selected. The man had been previously suffering from inflammation of the liver, was in deep collapse, pulseless, with rice water purging, severe vomiting, and cramps. Dr. Patterson injected a quarter of a grain of acetate of morphine. The result was beyond his expectations. In a quarter of an hour the cramps and vomiting ceased, the patient fell asleep, the skin gradually became warm and moist, the pulse returned. In two hours he awoke, and said he felt much better. The injection was repeated; he again slept for three hours. The reaction was perfect. He lived three weeks, and sank from typhoid exhaustion, as much produced by his old liver complaint as from the reactionary fever. The same good results followed in almost every case in which it was tried. In ordinary cases one or two injections of from one-quarter to one-half of a grain sufficed. In a few cases three injections were given, and only twice has Dr. Patterson had occasion to give four. It was given even to very young children, in doses proportioned to their age and condition. In the milder form, where the purging, vomiting, and cramps were severe, and collapse just commencing, he never wasted time on other treatment. An injection of a quarter of a grain was given, perfect quiet ensued, and bottles of hot water placed in the bed. The patient fell asleep, and,

¹ *Medical Times and Gazette*, September, 1854.

² "A Treatise on Asiatic Cholera," pp. 460, 461, 1870.

as a rule, awoke nearly well. Many cases were thus nipped in the bud. Dr. Patterson does not, of course, maintain that this treatment is a specific against cholera; he only claims for it that its action is more decided than any other treatment he has seen or practised, and that in the race against death we gain time for further treatment when it is necessary. It is long since Dr. Patterson lost hope of the ordinary treatment influencing much the course of the disease, and, after treating more than a thousand cases at various times of epidemic, he is glad to report that this has really been of great service. His colleague, Dr. Werry, speaks equally favorably of the results obtained in his practice. Dr. Patterson regrets that want of time prevents him at present from giving the cases in detail; but the subjoined table gives at a glance the main results:—

	Number of Cases.	Recovered.	Dead.
Treated in the usual manner	10	1	9
Treated by morphine injections	42	22	20
Total	52	23	29

But of the cases treated by injection, 8 were perfectly helpless from the first being *in articulo mortis*, one had severe liver complaint, and one was far advanced in consumption; so that, in reality, they had 32 cases where the treatment had a fair chance, reducing the mortality to 10 in 32; and of these 10, one was 60 years of age, one within a few days of her confinement, and three hard drinkers.

In reference to the subject of cholera, Dr. Patterson states that he is engaged in a series of experiments on animals, the result of which he hopes soon to communicate. So far as he has subjected dogs to the action of cholera-matter from the human subject, as by injections under the skin, into the rectum, and feeding them with food sprinkled freely with cholera dejections, none but negative results have been obtained.

ART. 25.—On "*Kidinga Pepo*."

By JAMES CHRISTIE, M.D., Physician to H. H. the Sultan of Zanzibar.

(*The Lancet*, February 17.)

At a meeting of the Epidemiological Society, on January 10th, a communication was read from Dr. James Christie, physician to H. H. the Sultan of Zanzibar, on "*Kidinga Pepo*," a peculiar form of exanthematous disease epidemic in Zanzibar, East Coast of Africa, from July, 1870, till January, 1871. This fever sprang up after the complete disappearance of cholera, and was recognized by the oldest inhabitants as identical with one which appeared as an epidemic on the East Coast of Africa about forty-eight years ago. It was quite unknown to the natives of India, from Bombay and Scinde, resident in Zanzibar; but the Arabs from Hadramaut, on the Gulf of Arabia, were familiar with it. The name "*Kidinga Pepo*" means cramp-like pains, produced through the agency of an evil spirit. This disease resembles in its most important symptoms "*dengue*," or scarlatina rheumatica. The patient was seized very suddenly with pain and stiffness of the muscles, especially those of the palms of the hands and soles of the feet; fever followed, varying greatly in intensity. The skin became hot and dry, the tongue red and spotted, but generally clean, the face of a bright scarlet color. This coloration was marked in every case, and usually accompanied by a puffy swelling so as to imitate erysipelas of the face; it was characteristic of the disease. There also occurred swelling and pain of the smaller articulations, besides much pain in the shoulders, back, etc. These symptoms were accompanied by very obstinate constipation. This first period of forty-eight hours was followed by a very complete remission of from two to three days. The fever returned on the fourth day, always with lessened intensity; on the fifth an exanthematous eruption, different from that of measles, of rubeola, and of scarlet fever, and more like that of erysipelas, appeared and

spread over the whole body in forty-eight hours. Then occurred swelling of the lymphatic glands of the head and face, and especially of the occipital glands; redness and even tumefaction and rawness of the mucous membranes of the nose, mouth, and, in severe cases, of the throat. During this time the stiffness of the muscles and pain of the articulations continued, and on the seventh or eighth day there was desquamation of the cuticle, and the acute stage terminated. Dr. Christie considers that this disease differs from "dengue" in several particulars: the swelling of the lymphatic glands did not occur until the third stage of the fever; the eruption was invariable in form, and, as described, unlike that of dengue, which presents many varieties; the implication of the mucous membrane of the mouth and throat; and the articular pains were to a greater or less extent invariably present, except where there had been previously attacks of malarious fever, sunstroke, etc. The symptoms and course of the disease were remarkably invariable and characteristic. The sequelæ of "Kidinga Pepo" were much more severe than those of "dengue;" the muscular pains may continue for months; and Dr. Christie himself, who was the first European attacked, suffered severely for two months afterwards. These chronic pains affected especially the shoulder, wrist, and ankle-joints; and, in addition to them, there was chronic tenderness of the superficial lymphatics. The disease appeared to be communicable, the members of a household being usually attacked one after another. "The Europeans suffered much more acutely than the natives, and very few escaped an attack. In no case did the disease recur in an acute form, and there were no fatal cases either among children or adults." The disease was treated during the first day with purgatives and five-grain doses of quinine. On the remission of the fever iodide of potassium in four-grain doses was administered with the most marked effect on the articular pains. Dr. Christie says, "I know of no medicine more entitled to the name of a specific than the iodide, its effects in subduing the disease being more marked than those of quinine in the treatment of malarious fever."

ART. 26.—*The Warm Bath in Smallpox.*

By WILLIAM STOKES, M.D., Regius Professor of Physic in the University of Dublin.

(*Dublin Journal of Medical Science*, January 1.)

In some notes on the treatment of smallpox Dr. Stokes lays great stress upon the use of the warm bath. He says: "We cannot doubt that the mortality in smallpox hospitals would be greatly diminished by the use of the bath." He describes a case in which the pustulation was almost universally confluent; the purulent matter highly putrescent; the hemorrhagic state developed; the body one universal ulcerous sore, and the blackness of the worst purpura developed; the odor of an intensely pungent and offensive character, which seemed to pass through the bystander like a sword. "Stimulants alone, freely and constantly employed, seemed to preserve the patient alive. The pulse was rapid, weak, and intermitting; and for several days we despaired of his life. At this juncture I happened to describe the case to my colleague, Mr. Smyly, who suggested the trial of the warm bath, with the view of relieving the terrible suffering. A bath in which he could recline was speedily procured; and, pillows being adjusted in it, we lifted the sufferer in, and placed him in the recumbent position. The effect was instantaneous and marvellous. The delirium ceased as if by magic; it was the delirium of pain, and the patient exclaimed, 'Thank God! thank God: I am in heaven! I am in heaven! Why didn't you do this before?' The fetor immediately and completely disappeared, so that, on entering the ward, no one could suppose that there was a case of smallpox in it. He was kept at least seven hours in the bath, during which time brandy was freely administered, and omitted only when it showed symptoms of disagreeing with the brain. He was then removed to bed. The surface was clean, and in many places the sores looked healthy and white. The bath was repeated next day, after which he fell, for the first time, into a tranquil slumber. From this

time his recovery was progressive, delayed only by the formation of abscesses and great soreness of the feet. That this gentleman's life would have been sacrificed but for the timely use of the bath, few who have had any experience in prognosis can reasonably doubt. He was in the condition of a patient every portion of whose skin had been burnt and ulcerated. . . . This case and its singular result, in addition to the experience of Hebra, justifies the recommendation of the use of the bath. No danger attends its employment; and, in asthenic cases, stimulants can be freely used. In the Vienna Hospital patients have been kept continuously in the bath for one hundred hours with good effect."

ART. 27.—*Antiseptic Treatment of Smallpox.*

By ARTHUR WYNNE FOOT, M.D.

(*Medical Times and Gazette*, April 6.)

Dr. Foot, of the Meath Hospital, has recently communicated a paper to the Medical Society of the College of Physicians, Dublin, during their discussion of the subject of smallpox. The ordinary plan of dealing with smallpox, as with most other diseases which run a course, is to let it alone, to treat symptoms as they arise, and to ward off evil effects should they make their appearance. In the ordinary sense of the word this is not treatment at all, and we are by no means sure that it is sound in principle. At all events, Dr. Foot has attempted, with a certain degree of success, to apply a system which has been attended with good results in surgery to a loathsome disorder, and one of extreme severity. We are happy to make his ideas and his system more widely known than they now are, and we hope that others will test both, so that we may know their true value.

The total number of patients treated was fifty-nine; but these were so carefully studied that their value is much greater than a multitude less closely observed. Of the fifty-nine twenty-four were confluent and six semi-confluent, and out of these eleven died—a mortality of more than one-third. But it must be remembered that confluent smallpox in a severe epidemic is an extremely fatal malady, its fatality amounting to quite 50 per cent.; moreover, the cases treated were in badly-fed patients, brought late to hospital, some unvaccinated—in short, a most unpromising series. Dr. Foot says:—

"The way in which I endeavored to carry out the antiseptic treatment was by giving carbolic acid internally in the shape of the sulpho-carbolate of sodium, and when more suitable the sulpho-carbolate of iron, giving the sulphurous acid of the Pharmacopœia, diluted with water, as the usual drink, using gargles of sulphurous acid, spraying the larynx with it, washing the nares and upper surface of the soft palate with solutions of sulphurous or of carbolic acid, keeping carbolic oil to the face, washing the body with solutions of sulphurous acid or vinegar and water, throwing pure sulphurous acid about the bed and bed-clothes of the patient, and burning sulphur in the room, so that the sick might breathe, for some portion at least of the day, an atmosphere charged with some sulphurous acid gas in it.

"After much consideration of the subject I have adopted the opinion that the secondary fever of confluent and semi-confluent cases is due to the presence in the body of products of decomposition, which commence to be formed as soon as the lymph contents of the hitherto vesicles become purulent, rather than that it results from the dermatitis which springs into existence at that period, and which I consider to be the necessary consequence of the irritation of the now numerous sub-epidermic abscesses: and believing that in carbolic acid, used both externally and internally, there is an agent capable, when it can get fair play, of checking the decomposition of the pus, or of paralyzing the effects of the products of its decomposition, I considered the first thing was to ascertain the best mode of its administration.

"I have given the sulpho-carbolate of sodium in thirty-four cases of smallpox, in doses of from seven grains occasionally, to sixty grains every third hour; it is very soluble, and can be taken in plain water, or, if its earthy-saline taste

must be disguised, it can be given in some infusion of orange-peel or of cascarilla. During its administration, carbolic acid is eliminated by the lungs, its odor being very perceptible in the breath, and the sulphuric acid and soda pass off by the kidneys. I have not observed it to cause any sickness of the stomach or unpleasant feeling in the head, even in very large doses; children have no objection to it. I have also verified the observations of Dr. Sansom, that subsequent to its administration the fetor of the evacuations from the bowels is greatly lessened, the urine is unusually slow to decompose, and the flesh resists putrefaction. I had opportunities of remarking the latter fact in making post-mortem examinations. I never found anyone to complain of the usually nauseous variolous odor of the skin.

"At the same time, in all confluent and semi-confluent cases I use sulphurous acid in every form and way in which it can be applied.

"One of the simplest and most effective ways of exhibiting sulphurous acid is in the gaseous form; flowers of sulphur dropped on a heated shovel and carried about the room with its pale blue flame, forms by its combustion sulphurous acid gas, which, diluted with the nitrogen of the atmosphere, can pass into the lungs of the patients; and I consider that there is reason to believe that this practice three or four times a day is beneficial to the attendants and other inhabitants of the house as a prophylactic. Irritation of the bronchial membrane soon gives notice when there is as much sulphurous acid gas in the atmosphere of the room as is consistent with health; it specially and soonest affects any one with bronchitis; and I should say it ought to be used very carefully if the variolous patient were laboring under that affection. One of the nurses at the hospital who suffered from chronic bronchitis used to be greatly affected by the daily fumigations, if in the rooms when it was being done, and used to feel its effects long before and long after any of the patients or other attendants. Some persons in health also have by idiosyncrasy a condition of the lining membrane of the air-passages which makes them peculiarly sensitive to this gas, even in a very much diluted form, and in such a reflex cough is very quickly excited. It is not to be supposed that the principal object in burning sulphur is to disinfect the room—this is an after consideration, and would require an amount of sulphurous acid gas dangerous if not fatal to life; but it is to develop as much of this antiseptic agent as may be safely inspired, with the view of checking the multiplication of the smallpox poison in the person of the patient, very minute quantities of sulphurous acid being capable of arresting fermentation.

"The sulphurous acid of the *Pharmacopœia* undiluted I frequently apply in an atomised vapor to the nares and pharynx, through vulcanite tubes, curved or straight as may be required, in the manner recommended by Dr. Dewar, of Fifeshire. I have found that patients like it, and eagerly ask to have the operation repeated. It removes disagreeable tastes from the mouth, keeps the nose free from obstruction by accumulated crusts, and much of it must reach the lungs. A few whiffs open the nose when it is stuffed, or when, as hospital patients say, the head is stopped; the spray has not the suffocating odor of the bottled acid.

"I give them the acid internally several times in the day, or for a drink both day and night when there is much thirst, in drachm or two-drachm doses at a time, diluted with water. One drachm of the acid in two wineglassfuls of iced water is a very pleasant drink. Less water may be used—a drachm may be taken in a wineglassful of water; but if the acid has been freshly prepared, or very well kept, the drinking such a solution may catch the breath. If the person drinking the acid in the strength of one drachm to two ounces of water will avoid inspiring through the nose when the glass is brought to the lips, and swallow the liquid in gulps, the vapor cannot irritate the air-passages. I always have the acid added to the water which the confluent and semi-confluent cases drink, and they like its acidity very much. I frequently take it myself as an agreeable and wholesome beverage, and advise the students to do so, as a prophylactic. I prefer the sulphurous acid to the sulphites or bisulphides, because they are so unstable in solution—the form in which they must be given—rapidly absorbing oxygen, and passing to the state of sulphates. Neither have they

much to recommend them in preference to sulphurous acid on the score of cheapness, purity, or flavor."

Of the complications which may arise in confluent smallpox, and which add so much to its danger, Dr. Foot enumerates four: laryngitis, delirium, hemorrhage, and albuminuria. Of the first he says:—

"Laryngitis in some degree is an almost inevitable event in confluent variola, and is, perhaps, usually the most frequent immediate cause of death. I have endeavored in all severe cases of variola to anticipate this event, this, I think, is the way to combat it; but if the case is not got in time, of course this plan is out of the question. When I have had an opportunity of treating a case from the commencement, or from an early period, upon the very first complaint of any kind about the throat, and sometimes the answer to the constant inquiry will be only a 'queer feeling' in the neck, I surround the neck with cotton-wool, spray the larynx and pharynx with a saturated solution of tannic acid, give ice and mop the throat with glycerine of tannin. I afterwards, when necessary, apply leeches freely to the neighborhood of the thyroid cartilage, followed by poultices and hot sponges. I also use sprays of solution of carbolic acid, five minims to the ounce, solution of sulphite of soda, sixty grains to the ounce, or the sulphurous acid B.P. undiluted. Of any single remedy ice has certainly given the most relief in laryngeal complications, and has been in almost constant use night and day, in the smallpox wards; the swallowing of the melted ice also relieves the salivation and dysphagia resulting from the irritated mouth and pharynx, and next to ice the patients seemed to like, from its immediate though often only temporary relief, the spray of carbolic acid, especially when sent through the nose, and followed by a stream of water."

Delirium, Dr. Foot thinks, is mainly due to habits of previous intemperance, and so allied to one form of delirium traumaticum, commonly called delirium tremens. In these, stimulants were the most useful remedies; chloral and opium did no good.

There was only one case of hemorrhagic smallpox, and of this the patient died. Albuminuria occurred in three, and these died.

As regards the face, Dr. Foot thinks the treatment given above as important as local applications, but he takes advantage of these, too, by keeping carbolic oil on it from the first in varying strength, from one to three, or one to seven of oil, hiding the smell, if objected to, by origanum. 'This he thinks does good.

Dr. Foot notes that with the sulpho-carbolates the urine is commonly blackened; but this, he says, is not due to the presence of blood. Furthermore, he remarks that he has always given sulphurous acid along with the sulpho-carbolates, his object being to cure his patient, not to experiment with drugs.

The use of antiseptic remedies in such a disease cannot be made out by one series of experiments, but in the hands of Dr. Foot they have at least proved so useful as to amply merit further trial. Dr. Hudson's experience has also been highly favorable.

ART. 28.—*Balsam of Copaiba in Smallpox and Scarlatina.*

By A. ROWLAND, M.D., Visiting Physician and Surgeon to the Marine and Emigrant Hospital, etc., Quebec.

(*Medical Times and Gazette*, February 17.)

From our knowledge of the effects of the balsam on the skin and mucous membranes, Dr. Rowland was induced to try it, in four or five-drop doses, mixed in ʒij syrup, and ʒij mucilage of gum arabic, three or four times a day, in the confluent smallpox of a person who had never been vaccinated. It caused no nausea, but, on the contrary, created a keen appetite, which continued till recovery. No pitting took place, and no local application was used but glycerine and water. Dr. Rowland tried the same mixture in scarlet fever, with most satisfactory results. Under its use, the tongue and sorethroat got rapidly clean and well, followed by a keen appetite, and by none of the usual sequelæ. The

secretion of urine was copious, and began to increase in quantity after two or three doses. At first it was of the color of ale and a little ropy, but by the third day quite clear and normal. The author's theory of the action of the remedy is, that it alters or destroys the character of the virus, and eliminates it out of the system by the skin and kidneys more particularly; for the recoveries have been unusually rapid. In both cases Dr. Rowand prescribed milk, beef-tea, wine, and spirits, according to need.

ART. 29.—*Hemorrhagic Smallpox Associated with Tetanus.*

Under the care of Dr. GAYTON, at the Homerton Smallpox Asylum.

(*The Lancet*, February 10.)

The following case presents features of unusual character, both as regards the tetanoid symptom and the amount and character of the eruption. It reads almost like a case of cerebro-spinal meningitis, and had it occurred at Dublin in 1866, instead of at London in 1872, it would in all probability have been so designated.

C. O——, aged seventeen, an errand-boy, was admitted on the evening of January 6th. The patient was quite well until the 3d of January, when he complained of shivering and headache. On admission, there were a few variolous papules on the face, trunk, and extremities, of a dark hemorrhagic character, with numerous dark-purple spots on various parts of the body. He was completely unconscious; the mouth widely open; the face distorted, and the pupils dilated, the left more than the right. He was constantly shouting out, but no answer could be obtained to any question. He lay upon his left side with his legs drawn up, and when placed on his back he reared upon the occiput and the heels, the body representing a complete arch. Fluid introduced into the mouth was rejected through the nostrils. Pulse 120; lungs clear. Pressure upon the neck by pinching produced no effect. Swallowing being impossible, enemata of beef-tea, etc., were given, and small doses of chloral hydrate produced slight relaxation of the muscular contraction, but otherwise did not appear to do any good. The patient remained in this condition until the afternoon of Jan. 8th, when he died.

Post-mortem Examination.—On removing the calvaria, considerable difficulty was experienced owing to the firm adhesion of the dura mater. The brain was deeply congested over its whole surface, and appeared softer than natural. No fluid was found in the ventricles. On the under surface of the pons Varolii, extending along the under surface of the medulla oblongata (where it abruptly ended), was a thickish layer of concrete pus. On the posterior surface of the medulla oblongata there was a similar layer of pus, which appeared to end at the junction of the medulla oblongata with the cord, the superior two inches of which were free from exudation; but, with this exception, the posterior surface of the cord throughout its entire length was covered with an exudation like that already described. The cauda equina was infiltrated with fluid pus. The anterior surface of the cord was quite free from exudation; the cord itself was considerably congested. On examination by the microscope, numerous cells were seen; these cells were full of granules, which disappeared on the addition of acetic acid. No change was observed in the nerve-cells.

SECT. II.—SPECIAL QUESTIONS IN MEDICINE.

(A) CONCERNING THE NERVOUS SYSTEM.

ART. 30.—*On the Temperature in Certain Affections of the Nervous System, and especially in Tetanus.*¹

By JOHN W. OGLE, M.D., F.R.C.S.

(*Medical Times and Gazette*, January 20.)

Dr. Ogle first alluded to a case of traumatic tetanus which he had described to the Clinical Society the previous session (which had recovered under the use of chloral, belladonna, wine, ice to the spine, etc.), and which had exhibited tolerably regular or periodic daily variations of a remarkable kind in the heat of the body—variations not corresponding by any means with pyrexia, with any rise in the frequency of respiration or of the pulse, and having no apparent relation to the food taken, the degree of sweating, or the amount or force of muscular spasm. He then described other cases of tetanus in which the evening temperature had been found to be remarkably high compared with that of the morning. Of these, one was a case which had received from Dr. Keen, of Philadelphia, in which, out of fifteen days that the temperature was taken, there were nine in which the evening temperature was much higher than that of the morning, being in several instances more than $1\frac{1}{2}^{\circ}$ and in some cases 2° higher; the pulse being the while often as low as 60 per minute. A second case was one sent to him by Mr. Dixon, of Preston, in which, during six days that the temperature was taken, there was a great evening increase of temperature over that of the morning, being on one occasion nearly 3° higher. A third case was one recently published by Mr. Poland; and a fourth, one published by Mr. Croft, in the *Lancet*, for 4th November last. Dr. Ogle did not consider that the great nightly exaltation of temperature was attributable to remedial agents used, though he recognized the fact that certain agents notably affected temperature, and quoted numerous instances in which it had been demonstrated experimentally both on man and animals, that temperature could be both increased and diminished, instancing (and giving authorities) the decrease of temperature from chloral, bromide of potassium, quinine, digitalis, alcohol, mercury, lead, etc., and quoting experiments in which nicotine, curare, strychnia, nux vomica, veratria, quinine, and phosphorus were injected into the veins of animals. Examination of the results of such experiments and trials showed very great diversity and discrepancy, and Dr Ogle suggested that research into the action of agents (both in health and disease) in modifying temperature might well and fitly be undertaken by the Clinical Society, and would prove a field worthy in every way of their cultivation. He alluded to observations which his friend, Dr. Fox, of Clifton, was engaged in on this subject. Referring to the modifications of temperature of tetanus, and to the possibility of the existence of variations in these modifications, according to the character and nature of the tetanic attack, Dr. Ogle remarked that it would be a question whether such variations have any relation to vascular changes in the spinal cord, or to such textural changes in the central nervous system as have been observed in certain fatal cases of this disease by Rokitsky, Wedl, Wagner, Demme, Fleckner, Eisenmann, Oppolzer, Wunderlich, and more recently Clarke and Dickinson. Dr. Ogle said that he thought it was a matter of consideration how far such histological changes were due to vascular congestions or to increased blood-temperature induced in the course of the disease. In connection with the high temperature of tetanus, he alluded to the views which had lately been promulgated, especially in Germany, as to the condition termed fever—a condition which was supposed to result

¹ Read at a Meeting of the Clinical Society of London, on January 12th.

from an unwonted state of the central nervous system, by Wunderlich, Virchow, and many others. He specially drew attention to the researches of Tscheschin, who looked on fever as the result of a morbidly increased activity of the spinal centres in consequence of a weakening or paralysis of the moderating portions of the brain, by which a number of chemical processes are increased to an extent which is never attained under normal conditions of the functions of the brain. He observed that, whatever part the central portions of the nervous system may play in the increase of temperature in disease, we must, of course, allow that the vasal nerves, as well those which contract the vessels as those which actively dilate them (if such there be), are intimately concerned, and that an arrest of the natural loss of heat by radiation may lead, by causing its accumulation, to an increase of general temperature as much as an actually and positively increased production of heat. Dr. Ogle then alluded to other cases ordinarily looked on as non-pyrexial, in which the evening temperature was very much higher than that of the morning; for example, those of diabetes, published by Dr. Foster, of Birmingham. (The examination of temperature in cases of diabetes by himself had given different results.) It was to be remembered that in many cases of diabetes the central nerve-structures were at fault. He alluded to cases of meningitis in which the exceedingly high temperature was noted; one noticed by Dr. Bradbury, of Cambridge; also two cases of general paralysis of the insane, for which he was indebted to Dr. Mickle, of the Derby Asylum; and finally, to a probably exceptional case of chorea which he had lately treated, and in which the temperature for twenty-one days was noted morning and evening, the latter being almost always much higher than the former. Dr. Ogle referred to the great importance which the thermometer, as supplying a measure of expenditure of nerve-force and tissue waste, was assuming in our clinical wards, thus competing with the stethoscope, microscope, and test-tube. He hoped shortly to have the opportunity of offering to the Society some remarks on the temperature of the body in paralysis.

ART. 31.—On the Pathology and Treatment of Neuralgia and its kindred Disorders.¹

By JOHN CHAPMAN, M.D., M.R.C.P.

(*The Lancet*, February 3.)

Dr. Chapman arranged the whole class of neuralgias into six groups, as follows: 1st. Those cases in which there is apparently no complication of any kind, and in which the pain, having no obvious cause, is referred to some part of the periphery, seemingly healthy. 2d. Those cases which, though marked by the absence of any morbid phenomena at the seat of pain, yet have an obvious or assignable eccentric cause, the pain being referred either to the seat of cause, or to some part of the periphery more or less remote from it. 3d. Cases distinguished by morbid phenomena of the voluntary muscular system, chiefly, but not necessarily, at the seat of pain. These phenomena consist of cramps or tonic spasms, twitches, jerks, and other convulsive movements. 4th. Cases presenting, besides the pain and disorderly muscular action just mentioned, some one or more of the following phenomena: pallor, coldness, and anæsthesia of the neuralgic area, partial paralysis and atrophy of the affected nerve, amaurosis, paralysis of various cerebral nerves, dilatation of the pupils, partial atrophy and enfeeblement of voluntary muscles, constipation of the bowels, deficient menstruation, certain indolent ulcers to which the epithets "neuralgic and cold" have been applied. 5th. Cases which, while presenting any of the phenomena characteristic of each of the preceding groups, are distinguished by symptoms of excessive secretion, the glands or glandular surfaces, which are excessively active, being generally seated within or near the region of pain. These symptoms comprise lachrymation, excessive nasal secretion, ptialism,

¹ Read at a Meeting of the Medical Society of London, January 15th.

bronchorrhœa, nervous flatulence, diarrhœa, excessive secretion of urine, seminal emissions, leucorrhœa, and unilateral sweating, or sweating over circumscribed areas. 6th. Cases which, while presenting some of the characteristics already described, also present symptoms of local inflammation, which manifests itself in various shapes, the peculiarity of the phenomenon in each case being dependent on the special character of the structure in which it appears. Dr. Chapman affirmed, as a general therapeutical principle, that those agents which can be used with the greatest effect in order to excite a sedative influence on the nervous centres, the hyperæmia of which gives rise to the pain and complications in question, are precisely those which are likely to exert the greatest remedial power. He believes that the best method of cure consists in modifying the temperature of the spinal region by the application of heat and cold. The paper concluded by a general explanation how to apply both cold and heat along the different parts of the spine, in order to produce the specifically sedative effects intended in each case, by warnings to avoid certain dangers which are incident to the practice of the method by those who, without the exercise of adequate caution and study of the principles which underlie it, presume to use it as if were a mere empirical nostrum, and by a brief discussion of several cases exemplifying, in a signal manner, the efficacy of the method in question in treating neuralgia, as well as its kindred disorders, and especially in inducing sleep.

ART. 32.—*On Galvanism in Neuralgia.*

By WALTER G. SMITH, M.D., F.R.C.S.

(*British Medical Journal*, February 3.)

At a meeting of the Medical Society of the College of Physicians, Ireland, on December 13th, Dr. Walter G. Smith read a paper on the use of the direct current in neuralgia. Three cases were cited, and occasion was taken to observe that the main points to be ascertained were the following: 1. Is the direct current, as a rule, superior to the induced current in the treatment of neuralgia? 2. Are there any cases specially fitted for the employment of the induced current? 3. Is there any essential difference between the action of the positive and the negative poles on neuralgic parts? Though the answer to the first query was decidedly in the affirmative, experience was not as yet united on the other points. At the close of the communication two forms of battery were exhibited, viz., a portable thirty-celled Smee's battery and a ten-celled Leclanché battery; the latter was that preferred by the author to all others. It combined the advantages of cleanliness, durability, and constancy, requiring no care for a long time after it was once charged. Dr. Smith had in his possession one Leclanché battery which had been charged fourteen months ago, and had remained in good working order ever since; and Mr. Yeates had had two cells of it in use for working an electric bell for three years without recharging.

ART. 33.—*On the Expectant Treatment of Delirium Tremens.*¹

By M. DECAISNE.

(*Archives Générales de Médecine*, November 1871.)

"I have recently had opportunities of treating several cases of delirium by the principal medicinal agents recommended for this affection. To five patients I administered opium, to four chloral, and to four others digitalis. The average period of cure, or at least of very marked relief of all the symptoms of mental excitement, was five days in the treatment by opium, and six days when chloral or digitalis had been given. I prescribed the same régime for all my

¹ Communicated to the Académie de Médecine.

patients, and was surprised to find that the results were almost the same, and had been obtained in almost the same time, in spite of certain differences in the special physiological effects of each medicinal agent.

"I then resolved to submit a certain number of patients to an entirely expectant plan of treatment, in order to determine whether simple régime and a withholding of the cause of the disease would give a similar result. The eight patients who were treated in this way were of different ages, between twenty-four and sixty-two years, and all, with the exception of one, were suffering from their first attack of delirium tremens.

"All were submitted to the following régime: entire abstinence from wine and spirits; some beer and an infusion of orange-leaves were given as drinks. The diet was low; a warm bath was given every day; and every morning each patient took a purgative draught containing sulphate of magnesia."

The author gives as an example the details of a case in which the patient, aged twenty-eight years, was cured at the end of five days of all symptoms except some persistent trembling of the hands and embarrassed movement of the tongue.

"The use of opium in the treatment of delirium tremens is not unattended with danger, on account of the large doses which it becomes necessary to arrive at progressively in the majority of cases. These large doses expose the patient to the risks of an accumulation of the drug. I have been enabled to convince myself that digitalis, when employed in large doses, often causes nausea and vomiting. In two cases chloral seemed to me to have been quite useless. It is at least an uncertain agent, upon which it is impossible to rely.

"It is not my intention to prove that we ought to reject, in the treatment of delirium tremens, those medicinal agents which, when discreetly used, have rendered, and will still render important service. I wish only to direct the attention of practitioners to a method of treatment which has recently been too much neglected, and one which it seems to me is capable of being often employed with advantage."

ART. 34.—*Athetosis.*

By WILLIAM A. HAMMOND, M.D.

(*Diseases of the Nervous System.* New York, Appleton, 1871.)

Under the name *Athetosis* (from *Atheros*—without fixed position), Dr. Hammond has described an affection which he believes has not hitherto been recorded, and which is characterized by an inability of the patient to retain his fingers and toes in any given position, and by their continual motion. He has observed two cases of this curious affection, both of which occurred in epileptics. In one of these patients the symptoms were observed after an attack of delirium tremens, which had been followed by a condition of unconsciousness for six weeks.

"Soon after recovering his intelligence he noticed a slight sensation of numbness in the whole of the right upper extremity, and in the toes of the same side. At first the movements of the fingers were to some extent under the control of his will, especially when this was strongly exerted, and assisted by his eyesight, and he could, by placing his hand behind him, restrain them to a still greater degree. He soon, however, found that his labor was very much impeded, and he had gradually been reduced from time to time to work requiring less care than the finishing, at which he had been very expert. The right forearm, from the continual action of the muscles, was much larger than the other; and the muscles were hard and developed like those of a gymnast. When told to close his hand, he held it out at arm's length, clasped the wrist with the other hand, and then, exerting all his power, succeeded, after at least half a minute, in flexing the fingers, but instantaneously they opened again, and resumed their movements." Dr. Hammond is inclined to think that this affection is analogous to chorea and cerebro-spinal sclerosis, and that the symptoms point to implication of intracranial ganglia, and of the upper portion of the spinal cord.

ART. 35.—*On the Morbid Anatomy of Paralysis Agitans.*¹

By M. JOFFROY.

(Gazette Médicale de Paris, No. 50, 1871.)

The author of this contribution gives the results of investigations recently made in three cases of paralysis agitans.

The first and second cases were very well-marked instances of this affection; the third was probably less conclusive on account of attacks of articular rheumatism and secondary rheumatic deposits.

The subjects of these three cases were aged females.

Two kinds of lesion were met with in these three cases on examination of the medulla and cord. The constant and the particular lesions were met with in only two of these cases, the first and the third.

The constant lesions were:—

1. *Obliteration of the Central Canal of the Cord.*—This canal is always patent in the infant, often filled up in the adult, and always so in the aged. But in paralysis agitans the epithelial cells which line the ependyma undergo proliferation in a very active manner, and completely obliterate the central canal.

2. *Proliferation of the Nuclei which surround the Ependyma.*—It has been remarked that this very active proliferation of the epithelial cells of the ependyma is propagated to the connective tissue surrounding the central canal. The proliferation of the nuclei of the connective tissue extends for some distance, sometimes almost as far as the gray horns. These nuclei, which are visible in the infant, but become less so in the aged, represent then an important lesion.

3. *Pigmentation of the Nerve-cells.*—In the infant there is no pigmentation save in cases of disease of the cord. It commences to show itself in the adult. In M. Joffroy's cases this pigmentation was very pronounced, principally in the cells of the vesicular column of Clarke.

Finally, it may be stated that in two cases the amyloid bodies seemed to be less abundant than usual; but evidently these play no important part.

In the first case a quite special lesion was found near the calamus scriptorius. This consisted in circumscribed meningitis with production of nuclei of connective tissue and accumulation of leucocytes, forming a rounded mass which had distended and distorted the calamus. This morbid change had extended to some extent into the adjacent nervous tissue, in the midst of which were observed numerous capillary vessels and some small hæmorrhagic deposits.

It is possible that this lesion was but the continuation and exaggeration of the lesion of the canal, which had extended from the ependyma of the cord, to that of the fourth ventricle.

In the third case there was observed on the posterior surface of the medulla oblongata near the pons Varolii a patch of sclerosis composed of fibrillar connective tissue and containing numerous winding vessels.

The nuclei of the connective tissue at this part of the bulb were found in great abundance. In this case there was no trembling of the head.

In the second and most marked case, no lesion could be discovered in the medulla or in the pons.

Parkinson and Oppolzer held that the lesions of paralysis agitans consisted in a sclerous alteration of the tissue of the medulla oblongata. Parkinson, however, did not use the microscope in the study of his case. That of Oppolzer is far from being conclusive. M. Joffroy, relying upon the analysis of his three cases, thinks it certain that the lesion of paralysis agitans is not to be found in the medulla, and if it does exist it is to be found in the cord.

¹ Communicated to the Société de Biologie, Paris.

ART. 36.—*Report of a Case of Aphasia.*

By JAMES G. GLOVER, M.D.

(Medical Times and Gazette, December 9.)

At a meeting of the Clinical Society on November 24th, Dr. Glover described a case of aphasia in a patient under his care at the Holloway and North Islington Dispensary. G. P., aged sixty-three, an intelligent workman in a varnish and color manufactory, came under treatment in the beginning of September with a very imperfect power of expressing himself, furred tongue, high-colored urine, and a weak pulse. The affection of the faculty of language was peculiar. Many words the patient could say quite well, but he was greatly embarrassed for want of the proper words. This appeared in his attempt to answer questions, and especially when asked to say what the names of particular objects were. Dr. Glover gave several curious illustrations. One day, on being shown a book and asked what it was, he said "good," "house," "butter." On being asked to write the name, he said, "a good;" then he remembered the right word and said "book." On a watch being shown to him, and being asked for the name of it, he said "*Tempus fugit*," but could not say the proper word; but on being asked to write it, he wrote "watch." He called a ring a "knife," and purse "bug," "book," "bug," "a pocket-book." One day, after naming the door and the fire, and being asked the name of the window, he was greatly puzzled, and said "five," "glass," "sash;" he was then quite confused for a few minutes, and being asked to write it, he put "fire-away," "fender," "windway," "wind-way," "shot," "lock." Ten days later, being asked the same question, he said "windle," and quickly "a window." He seems at present to know when he answers wrongly, and is sometimes impatient, and sometimes amused at his errors and his embarrassment. There was no other symptom of cerebral disease, no hemiplegia, and either none or but the slightest difference in the sensation of the two sides. He walked well, wrote fairly, shaved well, and protruded his tongue straight. Dr. Glover remarked that the case was especially interesting for being simple and uncomplicated with any lesion of intelligence or of motion, such as right hemiplegia. There was nothing to indicate any affection of the left hemisphere more than one of the right, as M. Broca's remarkable theory supposed, which localized this disease in some lesion of the third left anterior convolution. Seven or eight months ago the patient had had a similar attack, which only incapacitated him for work one whole day, by reason of the way in which he put wrong names on the varnish cases. The present attack began about eight o'clock one morning in the water-closet. He seemed to lose himself. He foamed at the mouth and fell down, but not quite unconsciously, for he tried to save himself. He lost his speech, but spoke a little, cried a little, and seemed inclined to fret. He walked home with the help of a young man, who gave these particulars of the attack, and who thought at the time the face was drawn to the left side. There was no drawing of the mouth since Dr. Glover attended him, and he saw him the day after the attack. Occasionally, the heart and pulse were irregular; at other times, and generally, they were regular, but weak. There was no abnormal sound. Mr. Carter had kindly examined the eyes, but the existence of lenticular opacity made it impossible to get any help in diagnosis from the state of the fundus. The patient's previous health had been good, excepting yellow fever in 1833 or 1834. He never had rheumatism or syphilis. The treatment at first was chiefly expectant. Latterly, ammonia and a little wine and beef have been its principal features. The aphasia had become rather less, though still persistent. Dr. Glover thought the symptoms might be attributed to either softening or embolism, or slight extravasation affecting a very limited portion of the brain, and inclined rather to extravasation, from the persistence of the aphasia and the nature of the attack.

ART. 37.—*On the Use of Bromide of Potassium in Epilepsy.*

By M. JULES FALRET.

(Journal of Mental Science, January.)

M. Falret gives the results of his treatment at Bicêtre during the years 1867-70, where he treated, almost invariably, confirmed cases where the disease was of long standing. He begins by giving fifteen grains a day, very gradually increased until the dose of one drachm is reached. This usually diminishes the number of attacks, and is then persisted with; if not, the quantity is again increased every week or fortnight, until eight scruples or two drachms are taken daily. If considerable improvement results, and if no bad consequences are observed, this dose is continued for one or two years, and then gradually brought down to the original dose of fifteen grains. He attaches great importance to the slowness with which the dose is increased and diminished; and ascribes most failures to suddenly leaving off the medicine. By this treatment he states that he has cured one-seventh of his cases, greatly improved three-sevenths, and failed with the remainder. Attacks of maniacal violence proved most amenable to treatment; next in order came nocturnal fits, then diurnal; vertigo and the "petit mal" being most difficult of cure, these last sometimes taking the place of ordinary fits under treatment. An acneiform eruption on the face, shoulders, and back is generally observed as soon as the daily dose of one drachm is reached; when it is not produced M. Falret usually finds that the bromide does no good—it sometimes becomes so annoying as to prevent treatment being continued. Considerable loss of mental power and other cerebral symptoms, of course, indicate an immediate suspension of the remedy; they seem to M. Falret more frequent in private practice than at Bicêtre. One patient died very suddenly, while taking only moderate doses of the bromide; the author analyzed the viscera, and found considerable accumulation of the salt in the brain and liver.

This paper was read before the Société Médico-Psychologique, and gave rise to two very interesting discussions, of which only the most salient points can be given here.

M. Morel looked upon the doses given as "fearful;" he has himself rarely given more than two scruples or one drachm daily.

M. Legrand du Saulle, on the contrary, stated that he saw no danger in such large doses, provided they were only arrived at very slowly: his full dose is two drachms and a half daily, which he only attains after several months' treatment. With this precaution he has never seen any evil results, not even emaciation. He believes, however, that such large doses are only needed for men, and that women are sufficiently acted upon by half a drachm to one drachm daily. He has treated 138 cases in all, cured 10 of these, greatly improved 19, improved 45, and failed in 64. He prefers the bromide of sodium for chorea, hysteria, hemicrania, and the earlier stages of melancholia; and the bromide of ammonium in all forms of cerebral congestion; he has seen it relieve symptoms of this kind in general paralysis with great rapidity.

M. Voison, who was the originator of this graduated method of administering the bromide, read a long critique upon M. J. Falret's paper. Besides acne simplex and indurata, he has observed another eruption of specific character in persons taking the salt. This consists of patches of confluent acne pustules, generally on the calves of the legs, which end by producing adherent scabs, and sometimes ulcers difficult to heal. He shows, by figures, that the occurrence of skin eruptions is no evidence of the favorable action of the remedy, which he looks for in some sign that it is acting on the medulla oblongata. This he finds by titillating the pharynx, nares, and epiglottis, and observing whether the reflex acts of nausea, sneezing, and coughing are produced. As soon as they cease, he considers the medicine to be producing its physiological action, and, therefore, to be acting beneficially upon the disease. He dwelt at some length on the various phenomena of bromism (among which he has seen acute

mania), and urged that no patient should be allowed to take more than one drachm of the bromide daily without being frequently examined by his physician. Of 41 cases (generally of confirmed epilepsy) treated by M. Voison, 17 have had no attack for five years, 20 are improved, and 4 remained in the same state. No one seems to have questioned the efficacy of the bromide during these two meetings, but, since then, M. Delasiauve and a few men of less note have expressed doubts as to its curative action in confirmed epilepsy, and have seen increased violence of attacks follow its suspension. What would they have said had they known that Binz and other Germans totally deny that the bromides have any different action from the chlorides of the same bases?

ART. 38.—*Paralysis of Taste and Smell.*

By J. BURNLEY YEO, M.D., M.R.C.P.

(*British Medical Journal*, May 25.)

At a meeting of the Clinical Society of London, May 10th, Dr. Burnley Yeo read a paper on a case of paralysis of the senses of taste and smell following concussion of the brain. The patient, a man aged fifty, came to King's College Hospital on January 11th, having four months before been thrown out of a cart. He was admitted into St. Thomas's Hospital in a semi-conscious state, under the care of Mr. Croft. A slight contusion was discovered on the back of the head, but there was no fractured bone. He vomited, was delirious and insensible during the night, and in the morning complained of much pain in the head, which was relieved by aperients. He soon recovered, and, feeling well, discharged himself after he had been in the hospital about a week. He found, however, that he could neither taste nor smell. This condition had persisted ever since the accident. He had suffered also a good deal from giddiness, and from severe pains on the right side of the head. He had been a perfectly healthy man, and quite free from any syphilitic taint. The patient's statements were thoroughly tested. Salt, sugar, solution of quinine, dilute acids, tincture of assafoetida, were applied to the tip, the centre, and the back part of the tongue, to the under as well as the upper surface, but were not recognized in any degree. The tongue, however, was sensitive to the slightest touch, and its movements were perfect. The sense of smell, similarly tested, was found to be absent. The patient was ordered five grains of iodide of potassium three times a day. The first two doses produced such violent symptoms of iodism that it could not be continued. The dose was therefore reduced to two grains; and as this also acted in the same way, only one grain three times a day was given. This dose, at first, produced iodism, and afterwards purged him; he, however, continued to take it. In a few days, the sense of taste began to return. On January 25th, he could taste solution of quinine as bitter, and tincture of assafoetida as bitter; but he could detect no odor in the latter. He could distinguish salt from sugar, but not tea from coffee. The sense of taste continued to return rapidly. On the 11th of February, he was able to taste the flavor of meat for the first time for twenty weeks. He could also now perceive strong odors; but smell came back less rapidly and less perfectly than taste. In connection with the return of smell, he complained of a curious subjective affection of this sense; a foul smell came into his nose like that of a stale tobacco-pipe, and it seemed to come down from the head. By the 20th of March, the patient was quite well. Dr. Yeo thought this case afforded many points of clinical and physiological interest. He thought it a somewhat rare circumstance to find the senses of taste and smell clearly absent together without any other affection of the nervous system. The absence of taste could not, in this case, be simply the consequence of loss of smell, as solution of quinine and tincture of assafoetida were at first not distinguishable from water; and when the latter was first recognized, it was as a bitter substance, and its peculiar flavor was not perceived: moreover, the sense of smell returned much later than the sense of taste. It was difficult to say what could be the lesion which would produce paralysis of these two special nerves and of no others. This difficulty was increased rather

than diminished by the very remarkable manner in which the administration of iodide of potassium had been followed by the recovery of both senses.

Dr. Lockhart Clarke believed the condition to depend on shock. He had seen several similar cases originating in this cause. He did not think there was any lesion, and was of opinion that, probably, the stimulation of the nasal mucous membrane produced the cure. He related the case of a child who, by standing on its head, brought on symptoms of concussion and hyperæsthesia of the leg, with the exception of the parts about the knee. The child had previously suffered from chorea, and indeed still presented slight symptoms of that affection. The child had, previously to being seen by Dr. Clarke, been confined to bed for four months. By local treatment the limb got well in six weeks.

Dr. Hughlings Jackson thought the case a very interesting and yet a very puzzling one. He had not seen complete loss of smell and complete loss of taste together. Not very unfrequently a patient would say he had loss of taste, when examination showed clearly that he had lost smell alone. The subjective sensations complained of by Dr. Yeo's patient were very important. Such subjective sensations occurred as a so-called aura in some epileptiform seizures, and especially in those cases in which consciousness was lost without convulsions; in some cases there were convulsions. Dr. Hughlings Jackson believed that in these cases there was disease in the region of the anterior cerebral artery, and that the subjective sensations were of particularly evil omen as to mental failure.

Dr. Broadbent said that he had seen two cases in which incomplete loss of smell and taste had become permanent. He doubted whether there was total loss of taste in Dr. Yeo's patient, and related the details of an interesting case, showing the possibility of Dr. Yeo's patient having meant that he could not distinguish all the qualities of the various substances.

Dr. Buzzard, referring to a case related to the Society by Dr. Anstie, in which severe neuralgia of the fifth nerve was accompanied by loss of smell and taste, suggested the possibility that, in Dr. Yeo's case, a lesion of the trigeminus had caused the loss of the same two special senses, the integrity of this nerve being apparently as necessary for the proper action of the olfactory lobes as for the perfection of the sense of taste.

Mr. Christopher Heath had seen more than one case in which taste and smell were gone, and alluded to the case of a lady who, after an accident, lost both taste and smell. This lady had, strange to say, found several among her Indian friends who had also lost both senses.

The President thought that the cases were not very rare. It was very difficult to separate taste, touch, and smell. In the present case quinine was not felt in any degree by touch or smell, but touch was not gone. He thought there may have been shock to the sympathetic centres in the neck, and through this channel to the nerves of taste and smell.

Dr. L. Clarke referred to a case of locomotor ataxy which he had already published, in which both taste and smell were lost.

The President observed that Dr. Clarke's case exemplified what he had just said about the sympathetic.

ART. 39.—*Is Insanity on the Increase?*

By HENRY MAUDSLEY, M.D., F.R.C.P.

(*British Medical Journal*, January 13.)

The conclusions derived from the considerations contained in this paper may be thus summed up:—

1. There is no satisfactory evidence of an increase in the proportion of occurring cases of insanity to the population; and no evidence, therefore, of an increased liability to insanity.

2. It is not necessary to assume such an increase in order to account for the undoubted great increase in the number of registered insane persons.

3. The difference between one insane person in 802 of the population in 1844, and one in 400 in 1870, is mainly, if not entirely, owing to the fact that in the former year the returns included only half the existing insane persons in the country, while in the latter year nearly all of them have been registered.

4. Some part of the difference is owing to the fact that certain patients are registered as lunatics now who would never have been thought so in times past.

5. A lower rate of mortality and a lower percentage of recoveries may account for a part of the increase in the total amount of insanity.

6. The proportion of admissions to the population, which represents approximately the occurring cases of insanity, does not, when the necessary allowances are made, yield evidence of any serious increase.

ART. 40.—*Conium in the Treatment of Acute Mania.*

By J. CRICHTON BROWNE, M.D., F.R.S.E., Medical Director, West Riding Asylum.

(*The Lancet*, Feb. 17.)

With the view of determining the relative duration of cases of acute mania treated with conium and with other remedies, Dr. Browne has contrasted twelve cases from each category. As the result of that contrast, he finds that twelve consecutive cases treated from the first with conium, admitted subsequent to Feb. 25th, 1871, and since discharged recovered, had an average duration, as measured by residence in the asylum, of 102 days; whereas twelve consecutive cases treated with other remedies, such as bromide of potassium, cannabis indica, chloral, and digitalis, admitted subsequent to October 1st, 1870, and since discharged recovered, had an average duration, as measured by residence in the asylum, of 150 days. This shows a balance of 48 days in favor of conium. When conium was used, that period of convalescence which it is thought prudent to interpose between the date when recovery might be called complete and the date of discharge from the asylum was in no instance unusually shortened. In some cases it might be thought that it was unnecessarily prolonged. So rapid and decisive were the beneficial effects of the remedy that it was feared at first they might prove transitory, and that, as is not seldom the case when recovery is sudden, a relapse might be looked for. Experience having now taught that this fear is groundless, a considerable curtailment of the term of medical supervision may be henceforth safely conceded. Indeed, so prompt is recovery, as a rule, under the conium treatment, that it appears that the necessity of removal to an asylum may be obviated in some cases of acute mania if it is had recourse to, and judiciously conducted, in their initial stage.

The curative effects of conium in acute mania are not limited to those cases in which that remedy is used from the outset of the disorder. Eight patients in the West Riding Asylum in whom other methods of treatment had been first employed have derived marked advantage from the substitution of conium for other drugs.

Dr. Browne expresses his conviction that the conium treatment of acute mania will speedily recommend itself, to those who use it rightly, as the most efficacious mode of dealing with that form of mental disease. In order, however, to secure its benefits, two conditions must be observed: firstly, the preparation must be good and active; secondly, the doses administered must be adequate in amount. The succus conii is certainly the most trustworthy preparation of the drug. Even this, however, varies in activity in an extraordinary degree. As to the doses required, Dr. Browne corroborates Dr. Hartley's assertion that they must be sufficient to produce the physiological action of the drug in order to prove beneficial in disease; the effect of conium is inversely as the motor activity of the individual to whom it is given. This being so, it must be evident that in acute mania, in which motor activity is at a maximum, very large doses will be essential. A woman laboring under acute mania has taken as much as two ounces of succus conii at one dose, repeated every four hours for two days. This was, however, an extreme case. As a

rule, Dr. Browne has commenced with two drachms of the succus for a woman, and three drachms for a man; and has rapidly increased the dose until he has noticed some cessation of restlessness, or signs of lassitude or weakness of the limbs. It is rarely that a dose of one ounce or ten drachms requires to be exceeded; and sometimes improvement begins with the very first administration, in which case no increase of quantity is necessary.

ART. 41.—*Treatment of Climacteric Insanity.*

By W. J. CONKLIN, Assistant Physician to the Southern Ohio Lunatic Asylum, Dayton, Ohio.

(*American Journal of the Medical Sciences.*)

Dr. Conklin says that, like all suicidal patients, there are two periods of especial danger; 1st. Early in the morning, when they are very liable to give way to their morbid impulses. Often a lunch before rising, will, for the time being, scatter all such notions. 2d. During the period of convalescence, when everything seems to promise a speedy and complete recovery, the nurses are apt to be less watchful, and the patient may make a successful attempt during a temporary exacerbation to which all are so liable. The friends must in all cases be warned of the danger of suicide even if no such intention appears on the surface. In many cases opium administered in large doses proves a very valuable agent; but a drawback to its use is the liability to the formation of the opium habit—a liability stronger at this than at any other period of life. While the depression is most marked, or during the paroxysms of excitement, the following prescription is useful:—℞ Chloral-hydrat., potassii bromidi, ʒʒ ij; spts. frumenti, syrupi simplicis, ʒʒ ʒj. M. Sig. Tablespoonful in a wine-glassful of water every four hours. A glass of ale will often act like a charm in calming an excited patient. Tonic medicines constitute the chief therapeutical means. He has seen, frequently seen, great benefit result from the administration of small doses of quinia in combination with the pyrophosphate of iron and Horsford's acid phosphates. Constipation is almost invariably present. Cathartics often fail to move the bowels, and occasionally do much harm. The real seat of the torpidity is in the brain, not in the intestines; in fact, when purgatives have failed, a good dose or two of opium will often accomplish the object; as a rule, gentle laxatives and tonics will accomplish all that is necessary.

ART. 42.—*Report of a Case of Intracranial Disease.*

By WALTER MOXON, M.D., F.R.C.P.

(*Medical Times and Gazette*, December 9, 1871.)

At a meeting of the Clinical Society of London, on November 24, Dr. Moxon related a case of intracranial disease cured by iodide of potassium. A young man, aged twenty-one, was admitted into Guy's Hospital, under Dr. Moxon's care, having been ill six months. The illness came on with severe headache; in about three months ptosis and ocular paralysis of the left side commenced, and as it went on the left fifth nerve also became involved, and the right hand grew partially numb. When admitted he had agonizing pain in the head. The left eye was intensely red, and its cornea ulcerated; it was almost immovable, and the lid was dropped. He could not feel moderate touches on the left face, nor taste salt on the left tongue, nor use left masticating muscles. He had two slight seizures of a doubtful kind on the first two days after admission. Iodide of potassium was given in three-grain doses thrice daily, and the dose increased to a scruple. He gradually got better of all his symptoms. The pain left him very soon; the other symptoms more gradually. He was in attendance at the Society's rooms, and the state of his left face and eye was practically normal again. The points to which attention was directed were chiefly these.

That this is the third case of syphilitic disease about the sella Turcica Dr. Moxon had met with. This he connected with the growth of the sphenoidal sinuses there, bringing in illustration the occurrence of exostoses very frequently about the frontal sinuses, and of exostoses on the long bones at the region of the epiphysal cartilage; all these facts going to prove that the seats of late development are unusually liable to disease. Dr. Moxon believed that it was incumbent on every one who had a case of local intracranial disease come under his care, to treat it at once with iodide of potassium, without waiting to make out its nature. He had not seen any serious ill effects from the iodide when taken to the extent of a drachm in the day for long periods. Slight salivation, a red rash, and catarrh, were not common, though they occasionally occur; and they are by no means to be compared with local intracranial disease as alternatives. As to absorption of the testes, he had never seen it. The iodism of old authors was probably referred to the poisoning of the blood by the absorption into it of broken-down matter of gottres duing their cure.

ART. 43.—*On the Growth of Nails as a Prognostic Indication in Cerebral Paralysis.*

By S. WEIR MITCHELL, M.D.

(*American Journal of the Medical Sciences*, April.)

In a communication to the College of Physicians of Philadelphia, Dr. Mitchell drew attention to the "growth of the nails as a prognostic indication in cerebral paralysis." In a case of paralysis Dr. Mitchell observed that the nails of the paralyzed hand, which had been previously healthy, became marked with deep serrations, crossing from side to side, and about a line apart. The peculiarity continued as long as the case was under his care, the growth of the nails being much slower than that of the nails of the unaffected hand. He resolved in future cases to study the nail-growth attentively. In a patient forty-seven years of age, the subject of paralysis supervening on apoplexy, he stained four of the nails of the palsied hand a deep yellow with nitric acid down to the lower edge. To his surprise, while the nails of the other hand grew as usual, these did not grow at all during three weeks. "Then, and while the arm was throughout still motionless, the nails began to grow, as was shown by a narrow line of white below the tinted portions. Within a week after this, the fingers became controllable by the will, and gradually the whole hand and then the arm was restored." In another patient, aged forty-six, suffering from paralysis of the arm, and aphasia, the nails of both hands were stained with the acid on the fourth day. Not the slightest growth took place on the palsied side for a fortnight, when, a white line being detected, the prediction was risked that, within a week, the limb would be moved, and this was realized more than completely. Apologizing for bringing the circumstance before the Profession on the slight basis of only two cases, Dr. Mitchell observes that some time may elapse before he meets with others at a sufficiently early period of their process, while the attention of other persons may be advantageously called to the subject.

"I have been unable to find that this observation has been made before. In old cerebral palsies the nails very often become deformed, and even the muscles may undergo changes, which are possibly due to the neutral sclerotic alterations which sometimes come on after the part has been long disused. They are then the direct result of isolation from spinal trophic influence. In recent cerebral palsies there is often cedema, but no muscular atrophy; and it is, therefore, remarkable that the nails should even suffer in their nutrition. It is still more curious, when we reflect that even in parts whose nerves are severed the nails grow as usual, and that chiefly in partial nerve-wounds do we meet with clubbing or serration. It seems as if the injuries of the brain must have excited an inhibitory influence, and the fact aids, to my mind, the view which I hold with many, that there are nutritive nerves. Theorists who follow Brown-Séquard would probably regard the checked growth as due to a spastic con-

traction of the vessels feeding the nail, and as a vaso-motor nerve impression. I cannot admit this, because no considerable amount of such spasm could last long enough, or be complete enough, to cause the result without making a visible difference in the tint of the nail and the thin part at its matrix. These remained much as usual—perhaps a little redder than common. To test this view, I faradized with a secondary current and dry wire-brush two of the nails daily, giving great pain and greatly flushing them. They were also kept, thrice a day, for half an hour in hot water, so as to flush them as much as possible. My patient, an intelligent person, being much interested in the question, submitted readily to this treatment, but no more growth took place in these nails than in the others. I have noted the low temperature in the last case, but in hands cut off from all nerve connection it is still lower, and yet the nails grow. It does look, therefore, in this case, as if some influence was at work here which did not act through a change in the vascular supplies. It is a point in favor of trophic nerves.

"Other and most interesting questions also present themselves. The re-growth preceded the return of will-power. If this should prove constant or common, it will certainly help us to answer the inevitable query as to whether the arm will recover at all, and how soon. It is, of course, desirable to learn how often this check of nail-growth occurs—whether in all cerebral palsies or only in certain ones—whether, in a word, it relates itself to particular brain regions, and is a direct effect, or arises from the spinal shock which these brain injuries occasion. I trust that I have been able to show, therefore, that this apparently trifling symptom may open the way to the solution of very important questions, and is certainly not devoid of interest for the most purely practical among us."

(B) CONCERNING THE RESPIRATORY SYSTEM.

ART. 44.—*Respiratory Murmurs.*

By JAMES R. LEAMING, M.D.

(*The Medical Record*, Feb. 1.)

At a meeting of the New York Academy of Medicine, January 4th. Dr. James R. Leaming read an able paper on "Respiratory Murmurs," of which the following is an abstract:—

After carefully examining the opinions of different writers, as Laennec, M. Beau, of Paris; Dr. Sanderson, of Edinburgh; Skoda, of Vienna; Dr. Hyde Salter; Dr. Waters, of Liverpool; Dr. Cammann, late of this city; Dr. Gerhard, of Philadelphia; Drs. Walshe, Corrigan, and Stokes, Dr. Leaming said:—

"It is evident that some consider the respiratory murmur as having a single seat and cause, while others recognize its composite character. Yet I am not aware that any one has ever attempted to analyze the murmur, and study its constituents separately, as well as together. They speak of the vesicular character, the pulmonary quality or the respiration, but they attempt no analysis. To show that this may be done, and ought to be done, in order to attain a higher grade of excellence in diagnosis, is the main object of this paper. A clear understanding of the whole matter will make it necessary, as preliminary, to look at the minute anatomy of the tissue of the lungs and of the bronchial system; secondly, the circulation of the lungs and of the bronchial system; and, thirdly, the characteristics and constitution of the residual air, its object and office.

"The bronchial system may be, and frequently is, called the connective system, or the broncho-respiratory; and the pulmonary is called the true respiratory system. They differ in almost every respect. The office of the broncho-respiratory is to convey air into the true respiratory system, while the true respiratory system is where the great function of vitalizing the blood is perfected. The bronchial system is characterized by cartilage, in its fibrous sheath, etc.

"The bronchial arteries have been called the nutritive arteries by anatomists, but I am not aware that they have ever dwelt upon the fact that the *venæ comites* do not attend the arteries into the pulmonary structure, and consequently this gives them a peculiar character. The bronchial veins return all the blood of the bronchial arteries—the nutritive arteries have no veins. Their blood is re-aerated where they do their work, and finds its way into the venous radicles of the pulmonary vein as arterial blood. This anomaly in the circulation is of great interest in explaining physiological causes and pathological effects. In pneumonia, it is this artery, accompanied with its plexus of ganglia of the organic nerves, lymphatics, etc., that preserves the life of the part and governs the whole process of resolution. We can all remember the anxiety of practitioners in the past to prevent abscess and gangrene of the lung after inflammation. But time and study of the natural history of the disease has proved to us that gangrene and abscess are rare accidents, even when no treatment at all is had. This peculiar vascular arrangement gives us an early knowledge, in many cases, of commencing phthisis. Occupation of the air-sacs by tubercle interferes with the circulation of the nutrient artery, and blood is thrown back upon the bronchial artery, resulting in bronchorrhagia—a conservative act, for, like the application of leeches, it sets the absorbents actively at work to remove the cause. In this way cases of early phthisis are self-cured, or, at all events, ameliorated, and the physician is guided in his treatment. This singular fact in the circulation was discovered by the late Dr. Cammann, in making his experiments to prove the non-anastomosis of the arteries of the lungs. This was shortly after 1840, and before any experiments had been made in Europe in regard to this circulation. Since then, several observers have come nearly to the same conclusion. The view I take is supported by anatomical fact, a basis on which all physiological theories should be founded.

"I remember that Dr. Cammann could not reconcile the incongruity of the apparent fact, that venous blood passed directly into the aerated blood of the pulmonary vein, and then to the left heart. The fact has been overlooked, that the blood from the nutrient artery passes through capillaries in the true respiratory system, on its way to the radicles of the pulmonary vein, and, of course, is re-aerated.

"I believe I am warranted in holding that there is a complete difference in the bloodvessels of the connective and of the pulmonary system. The nutrient arteries of the bronchial system have their *venæ comites*; the nutrient arteries of the true respiratory system have no accompanying veins, but pass their blood re-aerated directly into the pulmonary vein, prepared for systemic circulation. The nutrient artery is no exception to the rule of complete difference in the two systems, for in its office it belongs wholly to the true respiratory. The vessels of the bronchial system are the bronchial arteries and veins: the vessels of the true respiratory are the pulmonary artery and vein, and the nutrient artery of the lungs. Where the bronchial system ends the pulmonary begins, and the division is sufficiently marked—it is where cartilage ceases and alveoli commence."

Following a minute description of the true respiratory system, the speaker stated that physiologists describe residual air as filling the respiratory system as high as the third or fourth division of the bronchiæ. It not only fills the true respiratory system, but it distends it. The elements of the distending force are atmospheric pressure, muscular contraction, rarefaction, the laws of diffusion of gases, and that of affinitive attraction between oxygen and venous blood. The residual air occupies its position with such persistence as to be with difficulty dislodged after death, even with much pressure. It keeps its place with vastly greater tenacity during life, when each element of force is in active operation.

During inspiration the contraction of the diaphragm increases the capacity of the chest; at the same time the epiglottis is raised, and the weight of the atmosphere operates actively in dilating the lungs. Rarefaction of the newly inspired air takes place upon inspiration, owing to its immediate and intimate admixture with the residual air, and this is the third element of dilating force. The residual air is estimated to be 170 cubic inches, and the inspired air at 20.

At each inspiration, therefore, the residual air will be increased about one-tenth part in dilating power, plus the rarefaction of the inspired air. But the peculiar elements of this expanding force are the laws of the diffusion of gases, and that of the affinitive attraction between the unærated blood globules in the capillaries of the rete mirabile of the alveoli and the oxygen which is equally distributed throughout the residual air. Chemistry demonstrates that gases differently constituted in certain relations instantly intermix when brought together. The inspired air and the residual air present these differences. Air entering the connective system moves in a body through the bronchial tubes till it meets the residual air, when the law of the diffusion of gases operating, immediate admixture takes place. The residual air is instantly renewed with oxygen, in accordance with this law. The inspired atmospheric air moves through the connective system as far as the fourth division of the bronchiæ, with no other resistance than the friction of the tubes. When it meets the residual air it is immediately consumed, as it were, and does not accumulate, causing resistance. On this account the inspired air moves with increasing velocity, producing air and tube friction murmur. Tidal air in health is only heard in inspiration. Velocity of the moving air in the tube is the cause of murmur. Any one may demonstrate this fact by breathing through a tube gently, when there will be no murmur; but if the velocity of the moving air is increased, the sound will be increased in sonority and raised in pitch just in accordance with the rate of motion. In health, in unconscious breathing, expiration is not heard, and we know by experience that when it is heard in unconscious breathing, there is disease; it may be phthisis, or it may be emphysema. Other conditions must determine which. A murmur may be produced at will by hurrying the respiration. It is heard in systemic diseases like cholera, or in diseases of particular organs, as in cardiac apnoea, or Bright's small kidney. The cause of murmur in air moving in a tube, no matter what are the other conditions, or the disease, is the *velocity* increasing the air and tube friction.

The author narrated Professor John W. Draper's convincing explanation of one of the efficient causes of the circulation, based on accurate experimentation of affinitive attraction in the systemic capillaries. The same power operates in the pulmonic circulation, but with this important addition, that the affinitive attraction is not alone in the pulmonic tissues and the blood, but principally in the venous blood and the oxygen of the residual air. The intricate mechanism of the respiratory act was explained.

These facts in minute anatomy and physiology, and they hardly admit of any dispute, prove that the residual air as a body has no more motion than has the bottom of the deep sea. No change can occur except molecular, and none other is necessary. The law of diffusion of gases assures the comparative purity of the residual air, as well as its constant and guarded impurity, which is so necessary for the accomplishment of the vital act. The circulation would not go on if each blood globule should immediately come in contact with pure air, for then it would lose its impelling force, and, all the globules alike losing their attraction, stasis would be the consequence. Instead of this, both in the blood and the residual air, each globule and each air-particle moves in perfect order, never being in each other's way. This shows how the individual may live in bad air for a time, resisting its evil tendencies, and even of poisonous gases. It shows also why medical inhalations fail in their object. Medicated vapors have little or no admission into the residual air. Even oxygen gas, which is sometimes serviceable, can only supply atmospheric deficiencies. It can neither do the harm nor the good that has been predicated for it. An animal may even live for a time in pure oxygen gas, the active interchange-taking place between the gas and the blood restoring the necessary grade of impurity in the residual air.

The prevailing theories of air and tube friction murmurs, and the mechanism of the crepitant râle were then discussed. All theories, whether of vesicular murmur or crepitant râle, which ignore the presence of the residual air, are of necessity incompetent. The fact that residual air has none but molecular motion, may be demonstrated by a distensible bag, as of india-rubber. If it be forcibly filled with air, there will be air and tube friction murmur at the mouth

only, where the air moves in a body with velocity. The body of air in the bag will be increased by particles of air sliding in among each other, and without sound. But there will be resisting vibratory sound in the walls of the tense dilating bag, a susurrus, different, however, from that of the contracting true respiratory system in this, that it is only heard during dilatation, while the other is continuous, owing to active muscular contraction. Dr. Hyde Salter says, after speaking of the occupancy of the true respiratory system by residual air, and that about twenty cubic inches of atmospheric air are added at each inspiration, "each air-cell is therefore a tenth larger at inspiration than expiration." Now it is inconceivable that this slight variation in the capacity of these shallow open cavities should be attended with any sound. I cannot conceive it possible. For be it remembered that the air-cells are not nearly closed cavities, communicating by constricted orifices with the general cavity of the lobular, but wide-mouthed and patulous like a tea-cup, and in inspiration the air is not pumped out of and into these cells, but, as they undergo this slight change of volume, a small part of their contents passes just without them; and then again, on recovery of their capacity, from without just within them, if one can speak of within and without in reference to such slight interchange of situation.

In closing, the author remarked: "In this paper I have endeavored to show that the bronchial respiratory system is entirely different from the true respiratory system in anatomy, physiology, object, and use, and that the physical signs of pathological change are equally distinct and different; that the residual air, occupying as it does the true respiratory system, with force precludes the idea of currents of air within the lungs, and consequently the accepted theories of the vesicular or respiratory murmurs and of the formation of crepitant râle are necessarily incompetent. If my points are well taken, and the proof convincing, the profession will eventually sustain the truth, and much that has been received as settled literature will be swept away as rubbish, to give room for truer and better grounds of faith. In physical diagnosis the composite character of the respiratory murmur must be made evident analytically as well as synthetically.

"The reasons for introducing a new terminology are, that broncho-respiratory and true respiratory are descriptive, and indicate the seat of the murmurs. The term vesicular murmur was applied by Andral, supposing that it described the minute anatomy of the seat of the murmur. Later investigations show that the term is misapplied; for there are no structures that may properly be called vesicles in the lungs. Again, the terms vesicular and respiratory have been applied indiscriminately, and their present use would lead to confusion and misapprehension. In order practically to study these murmurs it will best be done by selecting a healthy person about twenty-five years of age, with perfectly developed chest, and with muscles not hardened by manual labor.

"*Respiratory Murmurs.*—Placing the ear lightly yet firmly to the chest, allowing the head to rise and fall with the respiration, listen to the breath-sounds. The tidal air murmur will first catch the ear, as modified by the true respiratory murmur, and is like the sighing of the trees over our heads in the forest when the boughs are generally stirred by the breeze.

"The character and quality of the respiratory murmur depend upon the absence or excess of one or other of the composing elements. If the true respiratory murmur be maximum in fulness, the tidal air sound will be short, only heard in inspiration, and will be of the soft breezy character described as gently sighing. While, if the broncho-respiratory be in excess, the tidal air sound will be raised in pitch, harsh, and will be heard both in inspiration and expiration, and is a sign of disease, as the other is of health.

"*The Broncho-respiratory Murmur* may be studied by forcing the breathing, when it will be heard in both inspiration and expiration; and its harshness, loudness, and pitch will depend upon the force given to the respiration. This murmur may be heard in its perfection in the chest of a child, before the true respiratory murmur has been developed.

"*True Respiratory Murmur.*—The ear accustomed to auscultation, after a few moments of concentration of attention upon the respiratory murmur, will recognize its dual composition. If the chest be perfect in condition, the tidal

air sound will be heard in inspiration only—soft and short, like breathing gently through the closed teeth; while the true respiratory murmur will be continuous, increasing in fullness in inspiration, and diminishing in expiration. It is of a low pitch, and is like the roaring of the sea at a distance, the waves breaking on an even shore or sand; or, better still, like the sound made by bees in cold weather, when the hive is tapped with the finger. It is like the innumerable vibrations of the wings of bees, increasing to maximum in inspiration, like the coming waves on the sea-shore, and decreasing in expiration as they recede. If the breath be held, this murmur may be heard without admixture, for there can then be no bronchial respiratory murmur. The sound is purely that of the susurrus of the delicate muscular fibres of the true respiratory system, contracting and relaxing over the dilating and resisting residual air. If the breath be held after a full inspiration, the murmur will be at its maximum; if it be held after expiration, it will be at its minimum fullness. It cannot be exaggerated, as has been said of so-called respiratory or vesicular murmur. If the true respiratory system be unduly dilated, it loses its power to contract on the residual air and the murmur wholly ceases. This is emphysema, and is proof of the muscular origin of the sound, which may return again after rest. This murmur only commences to be developed in the child at eight years of age; becomes recognizable at twelve, but is only fully developed at maturity.

"A beginner in auscultation may recognize true respiratory murmur in a good subject with ease. But when the chest has lost its excellent quality as an acoustic chamber, by physical changes resulting from inflammation, or when, from disease of the lung itself, the natural respiratory murmur has been altered or lost, or when the chest in its natural conditions is covered by thick and hardened muscles, the trained expert ear only can arrive at diagnostic truth.

"Many love and enjoy music, and may assist in producing it, but the trained expert alone can lead an orchestra, and harmonize each instrument into a body of perfect song. These facts, instead of being a matter of discouragement, should induce beginners to pursue auscultation with untiring assiduity, knowing that the end will crown them as masters in physical diagnosis.

"The ability to recognize true respiratory murmur under any conditions, to analyze its quality, and measure its power, gives its possessor the means of knowing even the approach of that most insidious disease, phthisis, and suggests the method of prevention.

"The true respiratory system, air-sacs, alveoli, nutrient artery, ganglia of the organic nervous system, with absorbents, etc., all require active use for the prevention of disease. Phthisis does not begin in the lower part of the lungs, which are constantly and actively in motion. If we insure the same kind of exercise in the upper part, we prevent and even arrest incipient disease.

"For more than ten years respiratory murmurs have occupied my diligent attention. The views in this paper are not hastily put forward. Some of them are new, and may receive the harsh criticism innovations ever provoke. I am not insensible to the opinions of my professional brethren. I desire their approval. Many on whose judgment I rely believe in true respiratory murmur as well as myself. But, wishing above all things for the establishment of truth, I submit the whole subject to this learned Academy, and through it to the profession."

ART. 45.—*Contributions on the Pathological Anatomy of the Pleura.*

By Professor E. WAGNER, of Leipsic.

(*Archiv der Heilkunde*, xi. p. 43; *Schmidt's Jahrbücher*, No. 10, 1871.)

The author of this contribution gives in the first place a short sketch of the normal pleura of man.

The costal and intercostal pleura presents a single layer of epithelial cells with from four to seven angles, with an average diameter of 0.016 millimetre, and each containing a distinct nucleus.

The small openings between the epithelial cells leading from the sac of the

serous membrane into the lymph-capillaries which have been seen by Recklinghausen and Dybkowsky have not been found in man by Professor Wagner.

The pleura both in its costal and its intercostal layers contains lymphatic vessels, and indeed in almost equal numbers and extent and with similar arrangement in both layers. The number of these lymphatics is so great that when they are moderately filled the pleura at many places seems to be almost completely covered. Their extent is much more considerable than that of the bloodvessels. They take on the whole two directions, one nearly parallel to the long axis of the ribs, the other more or less perpendicularly to those lines. These lymphatics are arranged in double and here and there in threefold layers. The superficial layer fills up the gaps in the so-called basement membrane lying under the epithelium. Below this layer is the deep-seated network of lymphatic vessels. These two layers are connected at many places.

One will be most readily convinced concerning all these conditions by injected preparations. With regard to the intercostal portion of the pleura Dybkowsky has brought forward sufficing proofs of the existence of pleural lymphatic vessels, but he states that with the exception of some large communicating branches there are no lymphatics in the costal layer of the pleura. Professor Wagner opposes this statement, since in men and also in rabbits and guinea-pigs he has seen this double layer of lymphatics both in the costal and in the intercostal pleura.

The reticulated basement membrane—that is, the very open layer of connective tissue lying between the pleural epithelium, and the most superficial layer of the lymphatic vessels, over and in the meshes of which the epithelium is spread, is to be found both in the costal and the intercostal layers of the pleura.

The bloodvessels of the pleura may be rendered visible by artificial injection and through hyperæmia; and most frequently, when the latter condition is associated with a slight degree of recent fibrinous inflammation. If a portion of pleura, after an artificial injection of the lymphatic vessels, be placed in a solution of chromic acid, one will often perceive at the same time a natural injection of the bloodvessels. Good preparations of undistended bloodvessels may be obtained by placing pieces of pleura in a mixture of alcohol and hydrochloric acid.

In pleurisy with fibrinous exudation the exuded material consists of a fluid and of a solid portion.

The fluid portion of the exudation is absent only in very recent cases. It lies partly free in the pleural cavity, and partly in the macroscopic and the microscopic meshes of the solid exudation.

The solid portion varies according to the duration and the nature of the exudation. In one class of cases the pleura is covered with a perceptible smooth or indistinctly reticulated layer, of a grayish or yellowish-white color, which can be readily peeled off. These are the distinctive characters of genuine fibrinous exudation.

In the most recent cases of fibrinous exudation (those of twenty-four or thirty-six hours' duration) of pure fibrinous pleurisy, it sometimes occurs that not a single drop, or but a very small quantity, of fluid exudation is to be found in the pleural cavity. Only an excessive injection of the bloodvessels, diminished lustre of the pleura, and frequently recent terminal pneumonia, together with distinct exudation on the corresponding portion of the pulmonary pleura, direct attention to the presence of a parietal pleurisy in its first stage. In such cases the microscope occasionally, though not often, shows that the pleura is covered by an evenly thin, shining and fibrinous substance, from which numerous cotyledonary masses project into the pleural cavity.

In a great majority of cases the fibrinous exudation forms a network, the meshes of which vary much in thickness, and enclose large and circular spaces, in which epithelial elements lie. Most of these networks present rounded and irregular projections, by means of which the exudation is probably united to the subjacent layer of pleura. In very recent cases of this kind no exudation or pus-corpuscles are visible.

In cases of recent fibrinous pleurisy, the pleural epithelium probably remains

at rest under the layer of solid exudation; the cells usually remain unchanged, but occasionally are found to be swollen.

Professor Wagner describes some peculiar changes in the epithelium, near the fibrinous exudation, at parts which, to the naked eye, seem to be quite normal.

The pleural lymphatic vessels, with very few exceptions, are dilated. In a few cases these vessels are not filled with fluid, but present another condition. Here there is a connection between the above-described meshes of the fibrinous exudation with the microscopical contents of the superficial pleural lymphatics.

In cases where a thick layer of fibrinous exudation has been formed, the close examination of their sections show that there is a microscopic, as well as a macroscopic, network. The coarse meshes of the network are made up of closely-packed, stretched, and fibrous formations, most of which present much lustre. The fibrous nature of this structure may be proved by boiling or submitting it to the ordinary chemical reagents. In many cases this arrangement of the fibrinous exudation is not to be seen; but the deposit consists of a loose spongy mass, composed of fine fibrinous threads, the interspaces of which generally contain fluid, and here and there some cellular elements.

The lymphatics of the pleura then most frequently undergo simple dilatation, and are filled by fluid or finely-molecular contents. This dilatation does not affect all the lymphatic vessels with the same frequency and to an equal degree. Whilst in cases of recent fibrinous pleurisy the superficial lymphatics are slightly or widely dilated, in cases of older fibrinous pleurisy, with a simultaneous thick fibrinous exudation, these superficial lymphatics remain unaffected; but on the other hand, the horizontally-disposed lymphatics in the sub-pleural, together with the proper lymphatic trunks, are widely dilated.

Professor Wagner, in consequence of his investigations, holds with the old view concerning the origin of the fibrinous exudation, and believes that the fibrine leaves the hyperæmic bloodvessels in a fluid form, and whilst in this form passes through the layer of pleural structure and the pleural epithelium, not only through the so-called stomata, and when it has arrived at the surface of the pleura separates into a fluid and a solid portion.

In recent cases of fibrinous pleurisy the special tissue of the pleura and usually also the sub-pleural tissue remain unchanged. In some cases, however, the sub-pleural connective tissue appears to be swollen and œdematous, and is sparingly studded with lymph-corpuscles. In this condition the bloodvessels of the affected tissue become clearly visible. In older cases, on the other hand, both layers of the pleura are regularly studded with free nuclei and colorless blood-corpuscles. Whence the former are derived, Professor Wagner does not know. Proliferation of the connective-tissue corpuscles cannot be distinctly observed.

Of the greatest interest clinically is the question of the connexion between the contents of the pleural sac and the gaps of the fibrinous exudation on the one hand, and the contents of the lymphatics on the other. Precise explanations on this point can be obtained only from pathological experimentation, by which a sero-fibrinous pleuritic exudation might first be produced, and then fluid or solid substances injected into the pleural cavity be found in the pleural lymphatics, and in the urine, &c. Researches of this kind fail, in consequence of the impossibility of establishing a sero-fibrinous exudation. Hitherto fibrino-purulent pleurisy has always been obtained. Professor Wagner succeeded in recognizing injected ink in the lymphatics of the costal and intercostal pleura, although only at isolated small spots.

The connexion of the interspaces of the fibrinous exudation with the pleural lymphatic vessels in many cases of pleurisy may be shown by fortunate sections in which only the epithelium of the pleura separates the cavities in question. It is also shown by injections of the pleura; the Prussian blue in the lymphatics and that in the cavities of the fibrinous exudation form a network which is either quite continuous or interrupted only at points corresponding to the pleural epithelium, which network during the process of injection first makes its appearance at different spots on the free surface of the exudation.

Finally, the above view is supported by cases in which the fibrinous exudation may be seen within the tubes of the lymphatics. Besides the connexion between the contents of the lymphatics and the fibrinous interleaving lines, there is also in these cases a continuity between the interspaces in the fibrinous exudation on the superficial surface of the pleura and the calibre of the lymphatics.

Fibrino-hemorrhagic pleurisy differs from the ordinary fibrinous form in the fact that the interspaces of the fibrinous exudation are nearly or entirely filled by red-blood-corpuscles. In one case examined by Prof. Wagner, various parts of the pleural tissue were studded by exudation corpuscles only, here by red-blood-corpuscles only, and there by both forms of cells, and generally so profusely that the fibrous tissue was scarcely visible. The lymphatics were dilated and filled with clear fluid, the bloodvessels also were dilated and much distended. In another case in which hemorrhagic fibrinous pleurisy had been associated with croupous pneumonia, the lymphatics were likewise filled with a very fine cloudy molecular substance, in which were deposited numbers of red-blood-corpuscles.

Prof. Wagner has not been able to follow out microscopically the healing processes in the various forms of fibrinous pleurisy. The manner of disappearance of the fluid exudation can be readily recognized in those cases where the lymphatics are dilated and not filled with fibrinous material. The mode of reabsorption of the fibrinous exudation has not yet been satisfactorily determined. In two old cases of pleurisy, Prof. Wagner found that the exudation was clouded by fat molecules, and that some interspaces contained cells that had undergone fatty degeneration, and others a grayish-brown finely molecular mass, resembling stagnant chyle. In both cases the costal, intercostal, and pulmonary pleuræ were thickened and composed of firm fibrous connective tissue and a few bloodvessels. On many grounds it is probable that the absorption of the fibrinous exudation takes place very slowly. From clinical observation it is well known that an evident rubbing sound may in some cases be heard months and even years after the removal of fluid exudation; and even absence of this rubbing sound is no sufficient proof of the removal of the fibrinous exudation. ●

Purulent Pleurisy.—The great majority of cases which on cursory or even a close examination with the naked eye seem to be those of pure purulent pleurisy, are really cases of fibrino-purulent exudation.

Prof. Wagner has not investigated the so-called free portion of the exudation found in the pleural cavity. The layer of exudation lying on the surface of the pleura, which resembles pus of some consistency, usually presents under the microscope pus-corpuscles inclosed in a delicate fibrous network. The arrangement sometimes bears the closest resemblance to that of a section of membrane in laryngeal croup. In other cases the purulent deposit presents a few pus-corpuscles almost hidden by abundant albuminous and fatty molecules. In very rare cases the pleura is covered by pure pus presenting here and there a few blood-corpuscles. On examining fine sections it will generally be found that the epithelium below the purulent exudation is partially or quite absent. On examination, however, of extremely fine sections, or of those peeled-off layers of deposit, the epithelium is visible and, as it seems, in its entirety. The epithelium, therefore, sometimes remains unaltered, but at others the cells are filled by albuminous and fatty molecules, and are increased in size. The epithelial cells in the neighborhood of these changes are sometimes found to be extremely small, as if from compression. The bloodvessels of the pleura are much dilated and fully distended, and reach as far as the epithelium. In most cases the lymphatic vessels, chiefly those in the deep horizontal network, are also dilated, and their epithelial cells undergo similar changes to that on the superficial surface of the pleura. The pleural lymphatics, owing to swelling of their epithelial cells, were very clearly visible in one case of a patient who died from erysipelas after injury to the arm. The pleural epithelial cells were also much swollen. The pulmonary and parietal pleuræ were loosely joined together, although no exudation could be observed either with the naked eye or with the microscope. Similar swelling of the epithelium without microscopic changes in the pleura was observed in two cases of septicæmia.

ART. 46.—*Treatment of Asthma.*

By J. HALE, M.D., of Owensborough, Kentucky.

(American Practitioner, February 15.)

This prescription is particularly recommended in cases of asthma, by Dr. Hale : R Ether, sulph. $\frac{3}{4}$ iss ; tr. lobeliæ, $\frac{3}{4}$ j ; tr. opii, tr. stramonii, $\frac{aa}{3}$ $\frac{3}{4}$ iv. M. S. Teaspoonful every hour or two until the dyspnoea is relieved.

ART. 47.—*Cod-Liver Oil in Whooping-Cough.*

By J. PRESTWICH, L.R.C.P., &c.

(The Lancet, Dec. 9, 1871.)

In this paper Mr. Prestwich reports a few cases selected from more than thirty in his own practice, in order to show the value of cod-liver oil in this complaint. The improvement following the use of the oil in Mr. Prestwich's own practice has been such that for some time he has considered it as a specific for whooping-cough. As is well known, the spasmodic attacks of this complaint are almost always preceded for some days by inflammatory or catarrhal symptoms. During this stage it has been Mr. Prestwich's usual practice to treat all cases as ordinary attacks of catarrh, and afterwards to administer the oil. A fact worthy of notice, the author states, is that the majority of children had considerable enlargement of the concatenate glands ; and the consequent reduction in the size of these glands may account to some extent for the benefit derived. It is also a remarkable circumstance that not one death has occurred where the oil has been administered and has been retained on the stomach.

ART. 48.—*On the Use of Chlorine Water in the Treatment of Diphtheria.*

By W. G. BALFOUR, M.D., of Montrose.

(Edinburgh Medical Journal, Dec. 1871.)

Chlorine water, which is prepared by adding hydrochloric acid to chlorate of potash, and adding water, has been successfully employed in the treatment of scarlet fever, its efficacy having been supposed to depend upon its disinfecting properties ; but Dr. Matthew Gairdner, of Crieff, introduced its use in diphtheria, and Dr. Balfour, while acting as his assistant, became aware of its remedial powers in that disease. He adduces several cases in support of his recommendation of chlorine water, and particularly mentions the case of a family living near Crieff, where four of the children suffered from diphtheria, and were all treated with chlorine water, stimulants, and milk ; three recovered, and one died ; and the unsuccessful result in this last instance is attributed by Dr. Balfour to the neglect of the mother in not giving the remedy. In another case, which was that of a child three years of age, the symptoms of diphtheria were well marked, and a little ipecacuanha wine was given with temporary relief, but as the symptoms soon returned, the chlorine water was administered in two-drachm doses every two hours. After several vicissitudes, the child had a violent paroxysm of coughing, followed by expectoration of something which was probably the false membrane, but which was swallowed, and immediately afterwards the child was relieved, and ultimately recovered. Dr. Balfour thinks that the remedial action of chlorine in diphtheria and scarlet fever is more general than local, and that when taken internally, it is absorbed into the blood, and there neutralizes the morbid poison ; but whatever the theory may be, Dr. Balfour has found the treatment very successful in practice.

ART. 49.—*Hæmoptysis in Consumptive Patients.*

By D. FRANCIS CONDIE, M.D., of Philadelphia.

(American Journal of the Medical Sciences, January.)

Hæmoptysis, in the description of tubercular consumption given in the books, is very generally enumerated as among the most common of its prodromes, and as a predominant symptom during some period of its course. This, so far as Dr. Condie's own experience goes, is an error, and one very liable to mislead those who have not studied with close attention the disease at the bedside of the sick. Of three hundred and sixty-nine cases of tubercular consumption, notes of which the author has kept, hæmoptysis occurred in eighty-seven (that is, in about 24 per cent.). In two hundred and eighty-two of the cases it neither preceded nor was present throughout the attack. The absence, therefore, of hæmoptysis, is not to be received in any case as an indication of the absence of pulmonary tubercles, nor can the occurrence of pulmonary hemorrhage be received as an indication of present tuberculosis of the lungs.

In the eighty-seven cases of consumption in which pulmonary hemorrhage occurred under Dr. Condie's observation, the hemorrhage preceded in forty the first symptom of the deposit of tubercular matter some considerable time—say two, three, five, six, or even twelve months. In some cases, however, it preceded the indications of tuberculosis only a few days, in others, again, it occurred at the very onset. In twenty-nine cases the hemorrhage occurred at different periods during the progress of the disease, and in its latter stage in eighteen cases in which the presence of cavities in the lungs was detected upon auscultation.

It appears to Dr. Condie, that, in the form of consumption for which, in a former communication, he suggested the name of *spurious*, hæmoptysis is much more liable to occur than in the tubercular form, as well preceding the attack of bronchitis or pneumonia, as at or soon after its occurrence, or in the advanced—chronic—stage when it has assumed the characteristics which assimilate it with one of tubercular consumption.

As to the cause of the hæmoptysis which is met with in those who are laboring under tubercular consumption, or who are predisposed to an attack of the disease, it varies in different cases, and certainly at different stages of the disease. In some cases it is evidently the result of a state of hyperæmia or congestion of some portion, of more or less extent, of one lung or both, the overloaded vessels relieving themselves by a percolation of blood or by a rupture of the coats of one or two of them. In other cases, the hemorrhage is caused by the opening from ulceration in its neighborhood, of an artery; in others, again, it has been traced to a slow but constant exudation of blood from the mucous coat of the more minute ramifications of the bronchial tubes. In the latter case, the matter expectorated consists of a mucoid fluid intimately mixed with blood, giving to the sputa a color like that of the rust of iron—sometimes the sputa have very much the color and consistence of currant-jelly. So far as Dr. Condie could judge, hæmoptysis from the first-named cause was most generally found to precede the deposition of tubercular matter or to occur in the early stage of tuberculization, or when the circulation in some part of the lungs is impeded by a large cluster of unsoftened tubercle. Hemorrhage from ulceration may occur at any time in the course of the disease, while the bronchial hemorrhage is most generally confined to cases of tubercular bronchitis or pneumonia, though it may be met with in the latter stage of uncomplicated cases of pulmonary phthisis.

Occasionally, the hemorrhage which precedes the attack of pulmonary consumption, or which occurs towards its close, is quite profuse, and has a tendency to recur again and again, at shorter or longer intervals. During the course of the tubercular attack, the hemorrhage met with is seldom to any great extent, and when once it ceases, it seldom returns.

What influence, for good or for bad, the occurrence of pulmonary hemor-

rhage in cases of consumption has on the latter, the data in Dr. Condie's possession are not sufficient to allow him positively to determine. Judging, however, from what facts he has been enabled to collect, he should infer that the influence exercised by the hemorrhage, one way or the other, upon the character or duration of the disease, was by no means very decided. It may be, that a moderate hemorrhage occurring just preceding the development of tubercles may have a tendency rather to retard than to promote such development. On the contrary, however, when the discharge of blood is considerable and repeated, an injurious effect may be anticipated. When hemorrhage occurs during the course of tubercular phthisis, even if only to a moderate extent, it cannot fail indirectly to have an injurious effect, by standing in the way of the patient taking that amount of active out-door exercise which is so important an item in the management of all cases of tubercular deposit, and at the period when most benefit is to be derived from such exercise. Profuse hemorrhage from the lungs occurring in the latter stages of tubercular consumption—which fortunately is rarely the case—could not fail, by its debilitating effect, to accelerate a fatal result.

ART. 50.—*On Tuberculous Phthisis.*

By E. LONG FOX, M.D.

(*British Medical Journal*, October 21, 1871.)

Dr. Fox sums up his remarks as follows:—

1. There are several forms of disease included under the head of phthisis.
2. Tubercle, whether of the lungs or of other organs, is due to a constitutional disease; and this is shown by death occurring without post-mortem results sufficient to have caused it.
3. Tubercle often exists quite independently of caseous deposits or vomicae.
4. This morbid condition is inheritable, but may be developed *de novo* by debilitating influences.
5. Its possible manifestations at all ages, and its frequent non-manifestation until the age of puberty, are only analogous to what is seen in other constitutional and inheritable diseases.
6. Chronic pneumonia found associated with miliary tubercle is not connected with it as cause with effect. The tubercle only becomes developed in cases in which the patient has previously had the tuberculous taint of constitution.
7. Some fatal chronic pneumonias may owe their irremediable properties to the same constitutional weakness, even where no miliary tubercle is discovered after death.
8. In general, non-tuberculous phthisis can be distinguished from tuberculous by clinical phenomena, and especially by the use of the thermometer.

ART. 51.—*Specimen of Miliary Tubercle, Softening to Vomicae, in a Case of Acute Tuberculosis.*

By WALTER MOXON, M.D., F.R.C.P.

(*Medical Times and Gazette*, March 2.)

At a meeting of the Pathological Society on February 20, Dr. Moxon exhibited a specimen of miliary tubercle, softening to vomicae, in a case of acute tuberculosis. Dr. Moxon said he believed this was the first specimen deliberately exhibited to the Society as tubercle of the lung. This, he supposed, must have one of two reasons; either that long ago every body knew enough about tubercle, or that even now no one feels sure enough concerning it. He had looked back through the writings of many authorities to learn those proper characters of tubercle which appeared so long to have satisfied the members of the Society, but always he found that there was the same supposition that tubercle was a matter of course; and thus far it appeared clear that every one

did know all about tubercle long ago. From this point of view the neglect of the subject by the Society was another proof of its pathological completeness, and yet there were some facts not quite in concord with so satisfactory an account of the matter. He specially alluded to three of those facts. Dr. Cayley had shown microscopic specimens of tubercle in the liver, etc.; Dr. Bastian had shown specimens to prove the histological identity of tubercle and early fibroid disease; and a committee, which had decided in favor of the tuberculous nature of some disease consequent on inoculation in the lower animals, had stated the histological grounds of their opinion. Now, he had found, on comparison of the characters described by these gentlemen, that they were very far from corresponding in the three cases. The characters relied on by the committee were a good deal fresh and unusual, and differed much from the descriptions by Dr. Cayley, and these from Dr. Bastian's; who, whilst saying on the one part that a tubercle had the same structure as early fibroid tissue, on the other part said he agreed with Virchow's description of tubercle as identical with lymph-gland tissue. From all this it would appear that there is yet a great deal that is very unsatisfactory in our knowledge of tubercle, and especially in its histology. In his examinations of tubercle he had found what Dr. Cayley described, and also he had seen the early fibroid-like appearances that Dr. Bastian represented; but he had never been able to make out anything like lymphatic gland. Of course, if by lymphatic gland you only mean cells with filamentous intercellular matter, then other cells with filamentous intercellular matter would be the same. But when we have regard to the characters of the cells and the consistence of the intercellular matter, or the distinctness of its filaments, then the thing becomes different. Every one knew that a lymphatic gland is very complex, and that in the follicular tissue of the gland there are not merely cells and filaments, but that the filaments are themselves connected with stellate cells, from which the cells among the filaments appear to arise; further, these free cells are indistinguishable from pus corpuscles, and therefore cannot be very like tubercle corpuscles. If you brush out under water a section of gland and a section of tubercle, the first becomes a beautiful plexus of fine fibrils, whose meshes have been brushed empty; but the other all brushes away, and no filaments remain—neither, indeed, can any filaments be seen before brushing. Hence he thought Virchow's comparison with lymphatic gland most unsatisfactory, and thought that at present the naked-eye appearances, taken altogether, were of infinitely more consequence than the microscopic appearances. By "taken altogether," he meant that the position, arrangement, and distribution of the tubercles in question, along with their physical characters, are of important weight in settling the tuberculous nature of any case. In the case which he exhibited, it was specially to the naked-eye appearances that he would draw attention. The case was that of an industrious, steady young shoemaker, who, after suffering for five months with urinary troubles, which shortly were, in their order, hematuria, hydruria, dysuria, and pyuria, got chest symptoms and hectic, and sank within a few weeks of the appearance of these. Dr. Moxon found at post-mortem extensive scrofulous disease of the left kidney, bladder, and prostate, which were dreadfully ulcerated; but besides this there was general tuberculosis, minute tubercles crowding the liver, spleen, kidneys, and lungs. The state of the lung deserved settled attention, because its tubercles showed very beautifully a gradation from the condition of minute grains at the base of the lung up to little vomices of the size of peas in the apex, the intermediate gradations of enlargement and central softening, conclusively showing that the tubercles—large, intermediate, and small—were all of one nature, while the small ones and the scattered distribution of all showed their identity with the miliary tubercles so generally distributed in the body; thus the case offered an example of genuine miliary universal tubercle, running in the lung through the common course of softening into vomices. He would shortly state what he conceived to be the significance of the case, which had a very special point in opposition to the views now known as those of Niemeyer, which views are just now meeting with an extent of favorable acceptance which, he thought, they were not entitled to, but rather obtained through our natural kindness toward foreign notions when they visit

us. He understood that Niemeyer's views had no such weight in their own country. The view proper to Niemeyer is this, that the process which produces vomicae in the lung is from the first inflammatory, and that tubercles in the form of little gray knots were apt to supervene secondarily. The point of the present case lies here, that the softening into vomicae present in it was evidently a secondary process in, of, or about the tubercles. The chief ground for accepting Niemeyer's view lies in the fact that secondary miliary tuberculosis, or general tubercle, as it is called, almost invariably kills while the tubercles are small, so as to allow of Niemeyer's school regarding them as distinct from the softening deposits which produce vomicae. In this case, however, life was prolonged until tubercles, which were unquestionably true tubercles in Niemeyer's sense, and secondary to scrofulous inflammation in another part, went on themselves to soften into vomicae; thus proving that the subsequent history of Niemeyer's secondary tubercles is to go on and form those same cavities which his view assumes to be of a distinct nature when found in common phthisis. The case affords proof that the same vomicae, which Niemeyer calls primary catarrhal pneumonia (which he holds to be distinct in kind from tubercle, but liable to cause tubercle, as one thing causes another different thing), do arise from changes in or about secondary tubercle. Here we have a strong ground for holding to Laennec's belief—namely, that the vomicae of common phthisis arise through the natural changes of tubercles. Of the essential truth of that view, Dr. Moxon entertained no doubt whatever. The specimen was accompanied by a full-sized painting of the lung, and charts of the microscopic appearances with high and low powers.

(c) CONCERNING THE CIRCULATORY SYSTEM.

ART. 52.—*On Diseases of the Muscular Walls of the Heart.*¹

By RICHARD QUAIN, M.D., F.R.C.P.

(*Medical Press and Circular*, April 3.)

LECTURE I.

Dr. Quain, in commencing his first lecture, observed that diseases of the walls of the heart have, in the past, been too much subordinated to affections of its valves. Clinical study of the diseases of the walls, however, teaches us that on them depend all the really serious effects of heart disease, while extreme disease of the valves may produce no symptoms so long as the muscular tissue of the heart is adequate to the work it has to do. As the walls are strong and efficient, or as they are weak, dilated, and inefficient will be the phenomena of disease with which we have to deal.

Enlargement of the heart is the first pathological state deserving attention, and is usually due to a combination of hypertrophy and dilatation. After glancing at the history of the subject, the lecturer described three forms of hypertrophy with which the cardiac walls may be affected. (1) Simple muscular hypertrophy, the characters of which are well known. (2) Connective tissue hypertrophy—a form not yet definitely recognized, although vaguely alluded to by various writers. The connective tissue is greatly increased in quantity, and seen in all conditions of development, surrounding and comprising the muscular fibres. The walls may or may not be altered in color, but they are increased in thickness and far more dense than in the first form. Its cause is probably a chronic inflammation of the interstitial connective tissue. (3) Fatty hypertrophy, often confounded with fatty degeneration. The muscular fibres are tolerably healthy, but the fat between them is greatly increasing in quantity, and is most abundant towards the outer surface. The other factor in cardiac enlargement is dilatation, the character and common origin of which are well known.

The causes of enlargement of the heart are: (1) Agencies acting through

¹ Dr. Quain's Lumleian Lectures at the Royal College of Physicians, March, 1872.

the nervous system. The influence of the nervous system on the heart is seen in the effects of shock, alarm, anxiety. Constant excitement leads to overaction, and this to enlargement. Statistics furnished by Dr. Farre show that during the last twenty years there has been a very marked increase in the number of males between twenty and forty-five who die of heart disease, while in the number of males under twenty and of females there has been little change. Other nervous influences lead to excited action, as those reflected by sympathy from other viscera. (2) Agencies acting mechanically lead to hypertrophy. Increased development of muscular tissue ensues on an increased demand. Such influences are the excessive and habitual exertion—as in many laborious occupations and athletic sports in excess—and obstruction in the circulation either at the heart itself, as in valvular disease; in the great vessels, as in aortic contraction; or in the distal circulation, as in Bright's disease, or in pregnancy. (3) Agencies acting directly on the nutrition of the heart may cause its enlargement, though these have more frequently the opposite influence. The blood state in Bright's disease may co-operate with the distal obstruction in causing hypertrophy. In adhesions after pericarditis the heart is commonly enlarged from increase, as the lecturer believed, in connective tissue as much as from increase in the muscular element. Cases of cardiac enlargement, which are not referrible to any known cause, are probably, in many cases, also examples of the connective tissue hypertrophy. This opinion, Dr. Quain said, previously formed, was completely confirmed by examination of one of these hearts, of an enormous size, which has been for many years at St. George's Hospital, and was found, on examination, to present a great increase in the connective tissue.

LECTURE II.

In his second lecture Dr. Quain continued his account of enlargement of the heart. He first described the effects, local and systematic, of the three forms of hypertrophy as far as they are known, contrasting the increased power of the first with the practical weakness of the two other forms, in which, though the muscular tissue may be increased, its power is spent in overcoming the obstacles to its free action. He then passed to the consideration of certain special effects of cardiac enlargement. First, its relation to cerebral hemorrhage. From statistics which he had collected, the following conclusions were drawn:—First, that in cases of apoplexy enlargement of the heart is more frequently present than disease of the cerebral vessels. Secondly, that when the heart is enlarged in apoplexy, the cerebral vessels are as often healthy as diseased. Thirdly, that when both enlargement of the heart and diseased vessels are present, valve disease is found only in two-fifths of the cases. Fourthly, its relation to phthisis. Enlargement of the heart was found to be present more than three times as frequently in men dying of phthisis as in women. The duration of life in phthisis seemed greater on an average in the cases in which the heart was enlarged, the percentage of deaths under one year being only half that in cases in which no enlargement was present. Fifthly, heart disease seems to have no influence in promoting hæmoptysis in phthisis. Lastly, its relation to renal disease. The kidneys were diseased in thirty-four per cent. of cases of heart disease collected by Dr. Chambers. The result is due to the influence of chronic congestion.

After a few remarks on the diagnosis of cardiac enlargement and its causes, Dr. Quain passed on to the subject of treatment. He insisted strongly on the importance of an accurate and early diagnosis and thorough investigation into the action of medicines, by which our faith in physic would become greater, and the list of curable diseases be lengthened. In the three forms of hypertrophy, we must counteract or remove as far as we can the causative conditions. In dilated hypertrophy we must lessen the intra-cardiac pressure by diminishing the volume of blood, and at the same time purify it, by acting on the secretory organs, purging, &c.

LECTURE III.

In the third lecture Dr. Quain first described fatty degeneration of the heart. After glancing at the naked eye and microscopical character of the affection, he stated his belief that it was due to a non-vital chemical or physical change in the composition of the muscular fibres. Such a change is seen in the formation of adipocire, especially when we consider it in association with the slow fatty degeneration which takes place in preparations preserved in spirit. There is a remarkable analogy between the character of this process, the formation of oil in olives after gathering, and the slow series of changes which occur in dead vegetable matter which result in its transformation into coal. Wagner's observations on the occurrence of fatty degeneration in albuminous substances within the peritoneal cavity, corroborated by Michaelis, were conclusive, though objections have been raised to them. Still more striking evidence that the process consists of a change in nitrogenous compounds is afforded by the observations of Mr. James Salter on the fatty degeneration which occurs in the pulp cavities of a necrosed tooth. These facts, the lecturer believed, were entirely opposed to the view advocated by Dr. Ormerod, that the fat is a fresh formation, as such, from the blood.

The causes of fatty degeneration are, first, general states of impaired nutrition and depressing adynamic diseases; and, secondly, local conditions, especially atheroma of the coronary arteries, and the occurrence of endo- and pericarditis. A diseased artery has been found going directly to a local patch of softening. Congestion of the coronary veins may tend to produce it. It is more than twice as frequent in men as in women, and increases in frequency as life advances. The change interferes much with the functions of the organ, its diminishing power being shown in certain nervous symptoms, especially syncope (a common cause of death), and in shortness of breath and attacks of cardiac pain, sometimes of original character. The local signs are those of weakness, feeble impulse, faint sounds, and weak, irregular pulse. These symptoms, occurring in connection with its causative conditions, will enable the diagnosis to be made. In treatment tonics and rest to the heart are the chief means to be employed, and by their aid great improvement may often be effected.

Rupture of the heart was next considered. The size and appearance of the rupture vary much; it may be so small as only to admit a probe, or it may be an inch or two in length. Its character depends on its local cause. The great majority of the cases occur in persons over sixty years of age. The immediate cause of the accident is some increased strain on the heart, usually determined by physical exertion or mental excitement. Fatty degeneration is the local condition which usually is found in association with it. Death sometimes occurs instantly, sometimes is preceded by symptoms of cardiac suffering and failure, more or less intense, and lasting for a few hours, or in rare cases, for several days. The latter cases have been those in which the process of tearing through was slow, or the rupture was through the septum. In about three-quarters of the cases the rupture is in the left ventricle; the right ventricle, right auricle, septum, and left auricle, being affected much less frequently, and in the order named. The blood usually escapes into the pericardium, and there separates into clot and serum, the former surrounding the heart. The accident is always fatal. Wounds in healthy hearts have sometimes healed.

Aneurism of the heart may exist within the cardiac wall, or project on its outer surface, sometimes to such an extent as to resemble a double heart. The sac is formed by the thinned cardiac walls, the muscular tissue often being greatly lessened, and the connective tissue increased. Sometimes bony plates are found in it. The pericardium is usually adherent. It occurs with equal frequency at all ages, but is much more common in men than in women. Its origin is probably some local degenerative change, inflammatory in nature, permitting dilatation; sometimes an abscess has opened into the heart. It usually occurs at the apex or base, most frequently the former. Symptoms are often absent, and when present are not special, being those of cardiac distress,

and would only indicate the nature of the affection in conjunction with special local signs. It is nearly always fatal, sometimes slowly by interference with the heart's action, sometimes suddenly by rupture of the sac.

ART. 53.—*On the Bruit du Diable.*

By A. DUCHEK, M.D., Professor of Medicine in the University of Vienna.

(*The Lancet*, February 3.)

There are to be found murmurs in the heart and the veins which do not take their origin in organic changes of the heart and the vessels—as, for instance, with men and animals exhausted by loss of blood and attendant anæmia. In the same degree as the loss of blood and the paleness of the skin proceed, these murmurs appear in the heart and the veins of the throat. If we touch, in severe cases, the vena jugularis with the finger, we perceive a continued vibration, like that of a string. This vibration is not interrupted, as we observe it in arteries, but continued. On pressure on the upper part of the vena jugularis, both the perception of the vibration and the acoustic evidence of a murmur disappear, proving it to be merely venous.

The formation of the sounds in the heart is influenced by two agents: the conditions of the valves of the heart and the vessels on the one hand, and by the pressure produced by the blood-stream upon them on the other. As we have, in such cases of anæmia, no symptoms permitting us to diagnose changes in the vibrating mediums, we are induced to seek the origin in the cause itself which produces vibration—namely the pressure of the blood. In disorders attended by these murmurs (as anæmia, chlorosis, loss of blood), the propulsive power of the heart is unchanged, though its contractions are more numerous, while the blood, either in its quantity or quality, is lessened, and consequently the pressure exercised by it in the circulation is diminished too, so that the impulse given by the blood-column is not sufficient to develop in the valves or the arterial walls the amount of tension necessary for the formation of the sound, which under normal circumstances makes its appearance in these vibrating mediums, but in these cases is lowered into the acoustic impression of a murmur.

In this way we explain the murmur in the heart. It is more difficult to find its cause in the vena jugularis. Some have attributed it to the arteries; but this is contradicted by its disappearance on pressure on the jugular vein, and by its continuity. This bruit is modified by two causes. It grows stronger at regular intervals, corresponding to the pulse, being strengthened by the sound of the carotids; we call these simply moments of reinforcement. The second cause is the respiration, which, when accelerated, influences the murmur.

What is the origin of this murmur? In the heart we explain all sounds and murmurs by vibrating membranes. We shall not suppose that in the veins a whirl of blood is their cause, nor the pushing of the blood against a narrow entrance. The jugular vein behind the insertion of the sterno-cleido-mastoideus is wider than elsewhere, forming the bulbus. Beneath this bulbus are valves in the narrowest part of the vein. These valves have a most important influence upon the whole circulation of blood. The pressure in the thorax being too high, they approach one another, and in this way oppose the further entrance of blood into the thorax. The part above them must be, consequently, dilated, as we remark it in cases of stagnation in the heart, the jugular vein being distended, and the jugulum growing gradually more shallow. The impulse of the blood makes these valvulæ vibrate, and causes the murmur. When the blood flows slowly the impulse is too weak, and no murmur is to be heard, just as a slight touch is not sufficient to make a string vibrate audibly. The murmur arises when the valvulæ are half opened and put into vibration by a sufficient rush of blood. Another peculiarity is to be mentioned. The bulbus is attached to the clavicula behind the articulatio sterno-clavicularis; and thus being stretched out, it facilitates the flow of the blood. If the pressure in

the thorax increases, by valvular failures, emphysema of the lungs, &c., the stream flows slowly, and therefore we do not find these murmurs attending disorders of the intra-thoracic organs, and hence the general view that this bruit excludes insufficiency of the valvula mitralis. Another consequence of this fact is, that these murmurs are not to be heard in persons affected by anæmia when they become the subjects of pneumonia or exudative pleurisy, and that they reappear at recovery. The two necessary requisites, then, are a speedy circulation of blood and a normal pressure of the blood in the thorax. This view affords us also an explanation of the murmur growing stronger when the respiration is more hurried. The thorax being powerfully dilated, the blood rushes in strong streams towards it, strengthening the acoustic impression. When the respiration is impeded, when it must be forced, the circulation loses the necessary quickness, and the vibration of the valvulæ becomes inaudible.

These murmurs are very rarely to be found along with mechanical changes in the heart. They accompany similar murmurs at the ostia, which are always systolic, never diastolic. They may be perhaps diastolic, but only in the most severe disorders of this kind, where it is impossible to distinguish whether there is only one continued murmur or whether the systolic and diastolic murmur meet and run into one another.

ART. 54.—On Precordial Dulness.

By Dr. DEBAUGE.

(*Lyon Médical*, No. 24, 1871; *Gazette Hebdomadaire*, No. 2, 1872.)

According to Niemeyer precordial dulness is found entirely on the left side of the chest and is limited usually by the left edge of the sternum. But this assertion hardly accords with what anatomy teaches concerning the topography and the relations of the heart. The central organ of the circulation is far from being situated entirely on the left side of the chest and externally to the sternum. Every one knows that the base of the heart passes beyond the middle line and even reaches for a short distance over the right edge of the sternum. The exact limitation of these relations on the cadaver is more difficult than would be supposed at first sight, on account of the retraction of the lungs, which takes place when the chest is opened, and always causes a more or less pronounced displacement of the heart. In spite of this difficulty, M. Sappey has succeeded in establishing that the base of the heart in an average number of instances, reaches on the right side to a point three centimetres from the median line, and consequently between twelve and fifteen millimetres from the corresponding edge of the sternum. The distance of fifteen millimetres between the edge of the sternum and the nearest point on the right side of the heart is that which has been indicated by Prof. Tigri, of Rome. Dr. Burresi, of Sienna, in order to overcome the cause of error which has been mentioned above, took the precaution before opening the chest to fix the heart by means of long needles which are passed through its walls and then forced into the posterior wall of the thorax. He was able to make out that the maximum distance of the heart from the middle line was between three and four centimetres. These anatomical data accord perfectly with the limits of the triangle made out by Burresi with the pleximetre, which constitutes the area of precordial dulness.

This triangle at the greatest part of its extent is placed on the left side of the chest, but it extends also over the sternum and even as far as the fourth and fifth intercostal spaces on the left side.

There is an inferior border almost horizontal, a left border directed obliquely from above downwards and from right to left, and a right border with an opposite direction, that is to say, from above downwards and from left to right. It is this last border which, commencing above in the third left intercostal space, crosses the sternum and ends at the fifth intercostal space on the left side near the upper border of the sixth cartilage. The right border corresponds to the base of the heart and to the auricles, the left border to the left ventricle and

auricle, and consequently corresponds in length to the left side of the heart; the inferior border is in relation with the auricle and the ventricle on the right side, and follows in consequence the line of what is usually called the right side of the heart.

The inferior is the longest of the three borders of the triangle; Burresi states that its average measurement is ten centimetres. The two other bodies, the right and the left, are equal in length, which is about nine and a half centimetres.

Over the greater part of its perimeter the area of precordial dulness can be readily made out by percussion. As the heart is surrounded laterally by the lungs, one can define with the pleximetre along the two superior borders of the triangle, corresponding the one to the base of the heart and to the auricles and the other to the left ventricle, a dulness which contrasts markedly with the sonority of the lungs. But it is not so with the inferior border, that which corresponds to the right edge of the heart and to the auricle and ventricle through which venous blood passes. Here the heart is in relation with the liver, and the precordial dulness is continuous with that of the hepatic gland. Thus along almost three-fourths of the inferior border of the area of precordial dulness one has, before mapping out the situation of the heart, to distinguish between these two kinds of dulness. As the dulness of the liver is much more pronounced than that of the heart, it is possible, with practice and use, to distinguish these two organs from one another. Near the apex of the heart it is no longer the liver but the stomach that is below the diaphragm, and at this point the incomplete cardiac dulness contrasts very greatly with the sonority of the abdominal viscera.

It is not necessary by the bedside to percuss over the whole periphery of the heart in order to obtain knowledge of changes that have taken place in its conformation; the state of dyspnoea associated with the majority of cardiac affections, will not permit us to submit our patients to too prolonged examinations, which they would tolerate with difficulty. It becomes necessary here to find the means of acquiring knowledge as to the state of the suffering organ by reducing as much as possible the number of points of the cardiac periphery which we may percuss. Burresi has limited to three the number of points of the area of cardiac dulness, the position of which ought to be made out by the pleximeter; he contents himself with finding out the situation of the three angles of the triangle. In the superior angle, which in its normal condition is found in the third intercostal space on the right side, he practised percussion along two lines; a horizontal line from left to right along the third left intercostal space, and a vertical line from above downwards immediately extend to the left border of the sternum. The substitution of dulness by pulmonary sonority indicates the seat of this superior angle of the cardiac triangle.

The inferior angle may be discovered by percussion practised from right to left along the fifth intercostal space until dulness is reached, and from above downwards along the right edge of the sternum until the complete dulness of the liver succeeds to that of the heart, which is much less pronounced.

Finally, the left angle, which may be detected by palpation alone, since it corresponds to the point at which the apex of the heart beats, is indicated by the same manœuvre practised horizontally from left to right, either in the fifth or sixth intercostal space, or along the sixth rib, and vertically from below upwards at a distance of two or three fingers' breadth from the sternum.

Burresi has learnt from observation that the anterior angle and the angle on the right side, that is to say, the extremities of the line of the triangle which correspond to the base of the heart, are found at distances of from three to four centimetres from the median line; that is, between one and two centimetres from the corresponding edge of the sternum. The angle on the left side which corresponds to the apex of the heart is more removed from the median line; its distance is about six centimetres.

The three angles of the triangle being found, nothing is more easy than to trace its sides, and thus to recognize the changes which have occurred in their length, direction, and mutual relations.

It is perfectly useless to apply the pleximeter over the two superior borders

of the triangle; such a proceeding would give no important diagnostic result. But it is not so with the inferior border. The direction of this is changed by alterations of the heart. Professor Concati, of Florence, has remarked, that hypertrophy of the right ventricle gives to the inferior limit of cardiac dulness the form of a curve with an inferior convexity depressed below the line which joins the two inferior angles of our triangle. Hypertrophy of the left ventricle gives a contrary result; it produces a curve, the convexity of which is upwards.

ART. 55.—*Remarks on Two Cases of Disease of the Heart.*

By S. O. HABERSHON, M.D., F.R.C.P.

(*The Lancet*, December 16, 1871.)

At a meeting of the Clinical Society of London on December 8th, Dr. Habershon narrated two cases of disease of the heart. The first instance was that of a young man aged thirty, who had been accustomed to great muscular exertion, and in whom the aortic valves were rendered imperfect by continued strain. Hypertrophy and dilatation of the left ventricle ensued; and the physical signs of aortic obstruction and regurgitation were accompanied by urgent dyspnoea and by paroxysms of angina pectoris. The mitral valve at length became so stretched that it ceased to act as a valve, and the indications of pulmonary and abdominal congestion became apparent. At this time a triple sound was audible at the apex of the heart, and continued for several weeks—till, in fact, the right ventricle became accustomed to the additional strain thrown upon it, and beat in unison with the left ventricle. After a time, a systolic bruit at the apex replaced the triple sound. The triple sound was explained by the want of synchronous action between the two ventricles. It has been noticed in rupture of the mitral valve, and also in cases of contraction of that valve; and in this instance it occurred for a short period in connection with an overstrained mitral valve. The patient became slowly exhausted by the increased embarrassment of the heart and by dropsy.—The second instance was that of a child aged eleven, in whom severe cardiac disease, affecting the mitral valve, followed an attack of rheumatism. Three years previously he had the first attack, and had been ill for a fortnight before his admission into Guy's Hospital, on February 22d, 1871. There was pain in the limbs; and, in the plane of the mitral, a loud systolic bruit, and a less distinct presystolic one were audible. He improved in health till about the middle of April (12th), when the presystolic bruit became more distinct; and this indication of fresh disease was shortly followed by brain symptoms; vomiting and delirium, with hemiplegia on the left side, suddenly supervened; symptoms of great prostration followed, with convulsive movements of the right side; and, when consciousness was regained, he cried out and complained of pain in the head and in the spine. On the third day he began to rally, and in ten days the paralysis began to lessen, but the hand and arm recovered before the foot and leg. The presystolic bruit also ceased, and the systolic mitral bruit alone remained audible. He left the hospital relieved on June 24th. The presystolic bruit was probably due to deposit on the mitral and consequent obstruction, and increased deposit led to augmentation of the sound. The cerebral symptoms were traced to embolism; and soon after the onset of these symptoms the presystolic bruit was diminished in intensity, as if the mitral, relieved of a portion of fibrinous deposit, acted more freely. The retrocession of the hemiplegic symptoms was in the inverse order from ordinary hemiplegia, from apoplexy—namely, that the arm recovered before the leg and the hand, and the feet before the shoulders and the hips. Very little medical treatment was permitted in this case, and it illustrated in a remarkable manner the natural subsidence of the symptoms of disease as the circulation of the brain accommodated itself to the temporary obstruction.

ART. 56.—*On the Symptomology of Variolous Cardiac Myositis.*

By M. DESNOS.

(Des Complications Cardiaques dans la Variole, et notamment de la Myocardite Varioleuse. Par MM. L. Desnos et Henri Huchard. Paris, 1871.)

The symptomology of cardiac myositis is not the clearest part of its history. M. Desnos, however, relying upon some very carefully-observed cases, describes three classes of symptoms which he considers to be special to this affection. These symptoms are cardiac, cerebral, and pulmonary.

Cardiac Symptoms.—After some slightly-marked cardiac disturbances the movements of the organ became feeble, and a peculiar *souffle* is heard with the first sound. This *souffle* is soft, deep, diffused, transitory and migratory. The soft character of the sound is explained by its mode of production. It is not due, as in endocarditis, to rugosity of the valve, or to contraction of an orifice, but rather to a pure and simple insufficiency determined by a morbid change in the papillary muscles, or of the portions of cardiac muscular tissue into which these are inserted. These muscles, too feeble to close the valves, close incompletely the auriculo-ventricular orifice. We have here a *souffle* of paralytic origin analogous to those observed by Traube in dogs poisoned by digitalis.

This *souffle* appears at the period when the cardiac adynamia commences. It follows the course of the fatty changes. When the tissue of the heart is more diseased the sound has a tendency to cease.

The two sounds of the heart, the second especially, may be doubled. At a later period the beating of the heart is scarcely perceptible, and is scarcely more than an undulation and trembling, interrupted from time to time by a kind of revival of the contractions: a veritable cardiac ataxy. The softened organ becomes dilated and elongated. The feeble impulse corresponds to the sixth or seventh intercostal space.

The pulse, strong and vibrating at first, diminishes and loses its regularity as the tissue of the heart becomes altered. Still it is not a rare occurrence to observe a marked want of accord between the signs furnished by the pulse and the energy of the cardiac contractions. This want of accord relates not to the strength of the pulsations alone, but also to their number. The debility of the heart and the presence of vascular concretions may explain these different facts obtained by observation.

Cerebral Symptoms.—At the time when there is declared asystole in cases of variola a peculiar delirium is manifested which M. Desnos subordinates to myocarditis. This delirium is an ultimate phenomenon of cardiac complications. It is a delirium of depression due to all appearance to cerebral anæmia. It is accompanied sometimes by general or partial convulsions, and a muscular trembling which precedes final coma.

Pulmonary Symptoms.—These are due especially to passive congestion, which results from the feebleness of the pulsations and from the obstructions caused by the bronchial pustules so frequently observed in confluent variola.

ART. 57.—*The Physical Signs of Mitral Stenosis.*

By G. W. BALFOUR, M.D.

(Edinburgh Medical Journal, November, 1871.)

Dr. Balfour maintains that systolic apex murmur is by no means the most distinctive sign of disease of the mitral valves. Such a murmur may be exocardial or endocardial, even produced by regurgitation, and yet the mitral valve be free from disease. The murmur, commonly known as "presystolic" (although this is not a strictly accurate term) may be considered conclusively pathognomonic of mitral stenosis. The presystolic murmur is most distinctly heard over the mitral area, i. e., within a circle of about an inch, described around the

point where the apex impinges as a centre. It is not propagated far in any direction, it is rarely heard above the third rib, and in every other direction its distinct propagation is usually equally limited. The presystolic murmur is really an auriculo-systolic murmur. By timing it with the carotid pulse (with which the first sound of the heart is synchronous) the murmur will be found immediately to precede and to run up to the carotid pulse. It occupies the time of the auricular systole, preceding the ventricular systole. "In timing this murmur it is obvious that we must employ the carotid, and not the radial pulse, for while the former is always synchronous with the ventricular systole, and apex beat, the latter is, even in health, always delayed to an appreciable extent—one-sixth of a second; while in disease, especially such as interferes with the arterial contractility, this delay is notably increased, and sometimes amounts to an entire cardiac pulsation." The carotid pulse is a perfectly safe guide, provided our senses are sufficiently educated to appreciate the teachings obtainable by comparing an audible with a tangible phenomenon. The true auriculo-systolic murmur is short, because it sharply coincides with the contraction of the auricles; it is rough, because it is a direct murmur produced by forcible muscular contraction. The rough presystolic murmur, more frequently than any other, gives rise to a distinct sensation of vibration to be felt over the mitral area (*frémissement cataire*). It is capable of being vocalized by the sounds represented by the letters R-r-r-b, or Vööö. It is separated from the second sound by a more or less lengthened, but always readily appreciable interval, and it distinctly precedes the apex beat and the carotid pulse, usually running quite up to them; but occasionally separated from them by an exceedingly short, though appreciable interval. Such a murmur is invariably an evidence of mitral deformity, of more or less constriction of the auriculo-ventricular opening. Such a murmur may disappear, but the lesion is permanent.

(D) CONCERNING THE ALIMENTARY SYSTEM.

ART. 58.—*Posture as an Important Adjunct in the Treatment of Diarrhœa and Dysentery.*

By E. P. SALE, M.D., of Aberdeen, Mississippi.

(*American Journal of the Medical Sciences*, October, 1871.)

Rest, as is well known, is the *sine qua non* in treatment of inflammations, and in order to secure it in the above intestinal diseases, Dr. Sale has for some time past directed patients to assume a *prone position* with a compress—e. g., a pillow or bolster—placed under the abdomen, the amount of compression to be governed by the degree of tenderness. He conceives this method to approach in effect the splints, used to retain fixture of limbs. The compress to a great extent prevents peristaltic action of the intestines, especially when used in connection with opiates. The position renders respiration more thoracic, thereby preventing movement of the intestines, which is consequent on abdominal respiration, and tormina in a great degree is relieved.

ART. 59.—*Membranous Enteritis.*

By J. M. DA COSTA, M.D., Philadelphia.

(*American Journal of the Medical Sciences*.)

Dr. Da Costa describes a complaint, under the name of *membranous enteritis*, with seven cases, which he believes is but very incompletely known, and scarcely recognized as a separate disease by the profession. The malady in its essential features consists of a painful and obstinate affection of the intestines in which membranes or skins are voided. It is not very common, yet it is not very uncommon; for there is scarcely a practitioner who, when his attention is directed to the subject, cannot recall one or more examples; and it is not unusual to

meet with references to isolated instances in our periodical literature. Unless he is much mistaken, the ailment is the discharge of the inner coat of the bowels, of which Paulus Ægineta speaks; it is, he is more certain, included in the fanciful delineation of infarctus by Kaempf. Good speaks of it as a diarrhoea tubularis; Todd describes it as follicular colonic dyspepsia; Sir James Simpson, as follicular enteritis; Cruveilhier and Laboulbène, as pseudo-membranous enteritis; Powell, impressed with its painful character, calls it "painful affection of the intestinal canal;" and very recently Whitehead has treated of the malady in his notes on mucous disease, besides other authors.

The disease is characterized by attacks of abdominal pain, followed by the discharge of what looks like skins or membranes, sometimes coming off in the shape of moulds or long tubes. There may be but one attack, but this is very exceptionable; much more generally one paroxysm is followed after an interval of months by another, and yet another, and at times the disease may become almost continuous, with occasional distinct exacerbations. A week, in his experience, is the shortest time for an attack to last, and distension, sense of burning, colicky pains, and at times a sluggish state of the bowels, precede the discharge by days; after this has taken place, the abdominal soreness lessens, the feeling of rawness passes off, and the patient is well, though he is apt to have a coated, flabby tongue, to remain dyspeptic, and be readily fatigued. After a few seizures the patient may gradually recover, yet is never robust; or the disorder becomes persistent. He states that the treatment of the malady must be discussed from a twofold point of view: 1st. The treatment most suitable during the attack; 2d. To prevent recurrence, or, in protracted cases, to keep the membrane from constantly forming. The diet should be nourishing, but not excessive in quantity, for the patient's digestion is feeble. As a rule, he orders eggs, milk, bread, and solid food, which is better borne than liquids; tea, coffee, and alcoholic stimulants are only admissible in very small quantities. Great attention should always be paid to the action of the skin, and baths, followed by systematic friction, are very useful. One of the most important points in the treatment of these cases is to prevent the patient from using purgatives. To prevent the formation of membrane, he has seen the best results from a steady course of iron, particularly of the perchloride. Cod-liver oil may aid in some cases, but it is generally not well borne. Acids sometimes appear beneficial. Injections have been highly recommended, and those of nitrate of silver especially. But, after all, their use is very limited, for the disease is not generally low enough down to be reached by them. Electricity he has not as yet employed sufficiently to express a decided opinion about it. Cumming has published an enthusiastic account of its wonderful effects, especially when conjoined with the pitch pills. He recommends that the battery be employed for a quarter of an hour daily. In conclusion, he says, concerning the management of the vexatious disease, that the physician should always search for what may be possibly an exciting cause, and seek to remedy it.

ART. 60.—*Abscess of the Appendix Vermiformis.*

By LEONARD WEBER, M.D.

(*New York Medical Journal*, August, 1871.)

In a paper, containing several observed cases of this disease, Dr. Weber makes the following observations on its pathology. After remarking on the fact that there are numerous cases on record where foreign bodies in the appendix, seemed to have produced no symptoms or inconvenience during life, he states that fecal concretions found in the cavity of the appendix, when dry, appear, on section, to consist of a central nucleus, with concentric laminae around, which are all of the same composition—viz., phosphate and carbonate of magnesia and lime, etc. They look very much like fruit seeds, and have often been mistaken for them, although they consist mostly of nothing but the ingredients of the human feces. To explain their origin, we must suppose that, by irregular contraction of the cæcum, a small portion of feces is forced into the

appendix, and then hardened to a concretion by gradual absorption of its fluid parts. The calculi, so formed, become a source of permanent irritation to the mucous lining of the appendix, inflammations gradually develop, and that portion of the mucous membrane particularly pressed upon by the calculus becomes thinner and thinner by ulceration. The muscular coat and peritoneal covering are at length perforated, circumscribed peritonitis takes place around, adhesions are formed with neighboring parts, especially the cæcum and omentum. By-and-by the adhesions also undergo ulceration, and then perforation must occur at one or two points of the appendix, corresponding to the two ends of the calculus. Should the ulceration eat around the entire circumference of the process, as has been observed in a few cases, it may even cut off the appendix by gangrene, the calculus remaining fixed in its extremity, or dropping into the abdominal cavity, where it may be easily overlooked in the autopsy. Tubercular and more rarely cancerous ulceration, may cause perforation of the appendix in a similar manner. The abscess resulting from perforation of the appendix may form and grow to the size of a man's fist, and larger, walled in by the previously adhering neighboring parts. Its contents may become solid, from the gradual absorption of the fluid parts, leading finally to a firm fibrous union of its walls, in which the calculus is imbedded, with the laminæ of the appendix wholly or partly obliterated; or ulceration may encroach upon the walls of the abscess, when perforation will take place either into the peritoneal cavity, rapidly followed by general peritonitis, or outward through the parietal muscles, or into the intestines, when pus is discharged per rectum. The proximity of the diseased appendix to the right iliac vein has been known to cause phlebitis. In a case recorded by Lewis, the coats of the vein were thickened and contracted below the appendix, and the vein filled by a thrombus in a state of decomposition; further up, above the process, it was filled with fresh coagula. The patient's right leg became cedematous, as in phlegmasia dolens. In a case observed by Heunoch, fatal hemorrhage into the peritoneal cavity took place. When the abscess makes its way into the parietes, fistulæ may result. Pleurisy, pneumonia, pneumothorax, and pericarditis have resulted from the abscess penetrating the diaphragm. When, upon the presence of a foreign body in the appendix, inflammation and gangrene do not supervene, the mucous membrane, distended and thinned by accumulation of its own secretion, is gradually converted into a serous membrane, secreting a thin albuminous fluid, the appendix itself forming an hydropic sac. Foreign bodies, as orange-pips, cherry-stones, &c., finding their way into the appendix, may produce similar pathological changes to faecal concretions; but the latter are the cause of ulceration in the vast majority of cases.

ART. 61.—A Contribution to the Clinical History of Rare Forms of Intestinal Obstruction.

By DR. ERNST GUSSMANN, of Stuttgart.

(*Wurtemb. Correspondenzblatt*, xli. 7, 1871; *Schmidt's Jahrbücher*, No. 11, 1871.)

Frau B—, aged twenty-nine years, presented on January 21, 1871, the symptoms of an ordinary attack of gastric catarrh; she had felt unwell for some days previously, although she had not been confined to her bed. On examination, Dr. Gussmann found that the patient was affected with marked insufficiency of the mitral valve, the cause of which had very probably been a severe attack of acute rheumatism, occurring two years previously. Dr. Gussmann prescribed bicarbonate of soda, and liq. ammoniæ acetatis, with decoction of rhubarb, and gave instructions about a corresponding diet. This treatment afforded considerable relief, the patient's appetite was restored, and three profuse motions were passed. On the 28d of January the patient felt so well that she took a walk, and on that day Dr. Gussmann discontinued his visits. On the following morning, however, he was again called in, as the patient during the night had been attacked by frequent vomiting and pains in the abdomen, and felt herself much exhausted; her tongue was thickly coated, and the abdominal muscles were hard, although there was no pain on pressure; there was a clear percussion

sound over the whole abdomen, except just above the pubic symphysis, for about three inches, where there was dulness and also some tenderness. No difficulty in micturition; menstruation had occurred regularly about three weeks previously. The patient denied having committed any indiscretion in diet. Dr. Gussmann concluded that there was some periuterine inflammatory process, and decided if the symptoms should continue, to make a local examination. The vomiting then ceased for a few hours, after the administration of morphia and the local use of ice, but afterwards returned with renewed severity; on the 26th there was evident ileus. The vomit contained some round worms, and several hard chalk-like small masses. The bowels had not been relieved since the 23d, and for some days past there had been difficulty in micturition. The abdomen had increased perceptibly in size, and its walls were stretched; there was, however, throughout the course of the affection, no pain on pressure. A close examination into the existence of any hernia was attended with a negative result. The above-mentioned area of dulness over the symphysis extended upwards for a distance of three fingers' breadth. A vaginal examination made on January 26th revealed an elongated and conical vaginal portion pressed against the symphysis. This was not painful when touched. The uterus was movable and both vaginal cul-de-sacs were quite empty.

This local condition was opposed to the idea of a periuterine inflammatory process; on the other hand, the long-continued arrest of stools, the frequent and uncontrollable vomiting, the presence in the rejected matter of fecal masses, the increasing distension of the intestine, and the collapsed appearance and the great agitation of the patient, indicated *intestinal obstruction*. Dr. Gussmann regarded the hardened fecal masses as probably causes of the obstruction, and against these directed his treatment.

The vomiting was combated by champagne and ice, occasional cold compresses, and by narcotics, and the constipation by frequent and abundant glysters and occasional doses of castor with croton-oil, which latter, strange to say, were seldom returned by vomiting. The annoyance caused by the continuously increasing distension of the abdomen, the restlessness, and the loss of sleep were treated by hypodermic injections of morphia, frequently repeated during the day. On the 27th there was a painful and slight stool, composed chiefly of fetid, hard, chalk-like masses; this, however, gave but little relief. From this period the state of the patient became very unfavorable. The intestine became more and more tympanitic, and by forcing the diaphragm upwards, interfered with respiration. Fluctuation, abdominal dulness, and severe pain, whether spontaneous or on pressure, were never present; peritonitis, therefore, was excluded. The vomiting continued, although it was not so severe; fecal material was no longer ejected, but only a thin acid, slightly fetid, and somewhat viscid fluid, derived from liquid nutriment which had not passed beyond the stomach. The skin was hot, the tongue red and dry, and the pulse small and frequent. On January 29th, the patient was placed in a warm bath, and a long tube introduced into the large intestine, through which, with some difficulty, a considerable quantity of solution of salt was passed. Subsequently there was intense collapse and excessive meteorismus, and on the evening of the 30th the patient died.

The post-mortem examination, made thirty-seven hours after death, revealed the following:—

The abdomen very much enlarged and distended, hepatic dulness quite absent; the peritoneal sac contained about two ounces of serous fluid, but no gas; the small intestine was distended to the utmost by gas, and its coats strongly marked by capillary injection, and somewhat cloudy; the liver was of normal size, was covered by tympanitic small intestine, and forced backwards: on section the organ was found to be congested with dark blood, and its tissue had commenced to undergo fatty degeneration; the gall bladder was much distended; the spleen was small and wrinkled; the stomach contained very little fluid, but was much distended by gas; the small intestine could be ruptured on firm digital compression, and then gave exit to quantities of yellow fecal fluid, without much smell; the whole of the large intestine was much contracted and quite empty, and the mucous membrane both of the large and small intestine was unaltered; the omentum had been changed into a cord of the thickness of the little finger, which was tightly stretched from the middle of the transverse colon to the pelvic cavity, where it was found to be very closely adherent to the right ovary, which was enlarged; this tough omental ligature was completely buried in the coils of small intestine; the right ovary was surrounded by tolerably

fresh and dark red masses of connective tissue, the product of previous inflammation, and contained an abscess of the size of a walnut; the right Fallopian tube was adherent to the corresponding ovary, and was thickened, tortuous, and imperforate.

(E) CONCERNING THE GENITO-URINARY SYSTEM.

ART. 62.—*On the Treatment of Diabetes by Lactic Acid (Cantani's Method).*

By GEORGE W. BALFOUR, M.D.

(*Edinburgh Medical Journal*, December, 1871.)

The pathology of diabetes, although still obscure, is now pretty generally admitted to consist in some perversion of the glyco-genic function in the body, and the treatment has hitherto been mainly directed to the object of depriving the organism of the pabulum from which the glucose is mainly derived, and such remedies are employed as may alter the nervous energy of the organs at fault. Cantani, however, considers that in diabetes there is not merely an increased production of sugar, but an imperfect combustion of that principle, and he believes that this imperfect combustion depends on the production of a morbid form of glucose which he calls *paraglu-cose*, a substance incapable of being transformed into lactic acid, and which therefore cannot be burned, and consequently passes unchanged into the urine. As the sugar and starch of the food cannot now be burned, the heat of the body is maintained at the expense of the albumen and fats, the combustion of the former tending to excess of urea, which adds to the density of the urine in diabetes. The albumen and fats received as food being now insufficient for the requirements of the body, the tissues are employed also for that purpose, and hence the rapid emaciation in the disease. In the early stage of diabetes the quantity of sugar in the urine varies with the diet, but in the latter stages Cantani believes that the inosite of the muscles, and even the gelatinous tissues are converted into paraglu-cose. He considers the liver to be the chief seat of disease, but whether this be the case or not, he proposes to give as complete rest as possible to this organ by withdrawing sugar-producing substances, and subjecting the patient to a rigorous meat diet. But, as this is only a temporary expedient, inasmuch as meat itself may ultimately be converted into paraglu-cose, he further proposes to prevent waste by supplying a combustible agent in a quantity sufficient for the wants of the body, so that the albuminates and fats may be spared. Now, in the conversion of glucose into carbonic acid, lactic acid appears to be the intermediate product, and lactic acid is the combustible agent which Cantani recommends. The quantity of lactic acid administered by this physician is from 77 to 154 grains daily, diluted in from eight to ten ounces of water, and his meat diet is exclusively one of plain meat, roast or boiled, without any sauces of milk or eggs, and without any bread, flour, or any vegetable matter whatever, the only seasoning permitted being salt, oil, and a little vinegar. The drink allowed is water, either plain or with a little of the purest alcohol; coffee, tea, and wine being prohibited. The results are said to be surprisingly successful, and Dr. Balfour remarks that the latest treatment adopted in Great Britain, viz., that by skim-milk, bears out Cantani's views so far as it is a strictly animal diet, free from amylaceous matter, and containing three to six per cent. of lactic acid. Dr. Balfour has tried both these systems, but he finds that of Cantani the more successful. He relates the details of seven cases, in most of which the treatment was attended with favorable results, and he invites a further trial of Cantani's plan at the hands of the profession. The lactic acid employed by Dr. Balfour is fluid, not syrupy, of the sp. gr. 1.027, and with the ordinary musty smell of sour milk, and three to four drachms a day appear to him sufficient for all practical purposes. Koumiss would probably be a useful article of diet for diabetic patients.

(F) CONCERNING THE CUTANEOUS SYSTEM.

ART. 63.—*Lectures on Dermatology*.¹

By ERASMUS WILSON, F R S., F R C S, Professor of Dermatology at the Royal College of Surgeons.

(*The Lancet*, February 10, 24, March 2, 16, April 6.)

LECTURE I.

Professor Wilson commenced his first lecture with a brief glance at the system of classification which he has adopted, and a summary of the ground over which he has passed in the two previous courses. In the last of these he considered eczema and its allies, and he proposed this year to resume the study of the common inflammations of the skin, and then to describe the specific forms. Before passing to the consideration of the next division of common inflammations, the erythematous group, he showed and described some new models illustrative of the eczematous affections, which had been added to the collection since last year's lectures, most of them by M. Baretta, of Paris. Two of these were examples of chronic eczema of the hand, with so much dried secretion that in Paris there had been much difference of opinion as to their real nature; one having been called by Bazin "eczéma corné," and by Hardy "psoriasis scarlatiniforme;" the other, by Bazin "ichthyosis," and by Hardy, "lichen." A third new model was of a beautiful specimen of lichen planus, an affection differing from eczema only in the absence of desquamation, there being one lesion of the skin instead of two. In the centre of each of the flat papillæ is the opening of a follicle, and this character determines the lichenous nature of the affection. The term lichen has of late been modified in its application. Originally a dermatological term, meaning a circular blotch of eruption, looking as if stuck on, it was borrowed by the naturalists to describe the peculiar cutaneous growth upon trees. By Willan, and at the present day, the term is used to distinguish pimples, but is restricted by some, as the lecturer, to those that are due to inflammation of the follicles.

The essential characteristic of the eczematous family is a complication of appearances, a mingling together of several lesions of the skin, redness, papules, vesicles, pustules, exudation leading to moistness, or to desquamation, or perhaps to swelling. According to the predominant lesion the variety of eczema is designated. Its correct appreciation aids the diagnosis of other cutaneous affections whose lesions are less complex, as erythema, pemphigus, and furunculus.

The essential characteristic of erythema is a hyperæmic redness; it is a pathological blush, and it is as evanescent as its normal prototype. Its origin is the same, the operation of the vaso-motor nerves, determined by some external or internal cause which must be sought out and removed. Erythema eczema are both hyperæmic conditions, but in the latter there is breach of continuity, in the former there is not, though there may be desquamation, and even, in erysipelas, vesication. The affections of this group are erythema, erysipelas, and urticaria. They are characterized by redness, more or less swelling, more or less itching, and more or less mobility. The amount of exudation is the main distinction between erythema and erysipelas, while in urticaria there are transient white elevations, probably due to spasm of the cutaneous muscular fibres. The fugitive and migratory characters of the erythematous group indicate their neurotic origin. Erythema fugax is frequently caused by emotion, and very commonly occurs as a reflex phenomenon from stimulation of the gastric plexus of the pneumogastric nerve. The tumescence which is a frequent accompaniment of these affections is due to exudation from the capillaries. It is usually

¹ Delivered at the Royal College of Surgeons, February, 1872.

quickly absorbed, but in one form of erysipelas finds its way to the surface. It may contain some coloring matter from the blood, which produces the varied hues of the fading areas. The Professor next pointed out and described the specimens of erythema and urticaria in the College collection of models. That of erythema nodosum was especially interesting, from the position of the eruption in rings around the legs, instead of, as usual, in oval areas parallel to its axis. He drew especial attention to the circumferential growth of some forms, well illustrated by the specimens exhibited, the isolated circles of circinatum, the coalescing circles of gyratum, the fragments of circles of marginatum. This centrifugal development obeys, he said, the same law as the circular waves which sweep over the surface of a pool into which a stone has been thrown. In erythema iris the appearance of the central boss has suggested a resemblance to the iris of the eye, but it probably differs from *E. papulosum* only in form, and constitutes an interesting link to more decided examples of eccentric annulation to be afterwards considered. Gastric disturbance lies at the root of all these varieties; its cause would seem to be of no importance. Usually some article of food is the source of irritation, but of allied nature are the cutaneous eruptions which follow the use of certain medicines, as belladonna, arsenic, and balsam of copaiba. The papular folliculitis produced by iodide of potassium is probably eliminative in character, but like the others, is essentially an irritation or over-stimulation of the cutaneous tissues. With this action is no doubt connected the therapeutical influence of arsenic as a cutaneous tonic in many chronic affections, and of the iodide in cutaneous syphilis. Analogy and the accidental cure of a case of lepra suggested the possible utility of copaiba, and Hardy has recommended it in that affection, but in the hands of the lecturer its success has not been great. A beautiful model of erythema copaicum, by Baretta, was exhibited.

LECTURE II.

After glancing at the two remaining forms of erythema, the lecturer spoke of erysipelas. It is, he said, an erythema with all characters aggravated in intensity, both local and constitutional. The latter, however severe, usually quickly vanish on treatment which has been justly regarded as specific—twenty minims of tincture of perchloride of iron every two hours, preceded, of course, by an aperient and regulation of the functions of digestion and assimilation. Many cases are presumed to be erysipelas which are really nothing of the kind. Herpes frontalis and eczematous inflammation of the eyelids are especially so mistaken.

Urticaria, although semi-neurotic, is more allied to the erythemata than it is to the pure neuropathic affections, prurigo and pruritus. Its name is founded on its neuro-sensitive qualities; the accompanying hyperæmia indicates its neuro-motor nature. The bosses and wheals are probably due to muscular spasm. The College models of urticaria were then described. Its special symptoms vary much in degree. Usually due to irritating food, it quickly disappears on the removal of its cause; but in one form, *U. persistans*, the affection is persistent. Occasionally the centre of a boss subsides, forming a yellowish area surrounded by a circular wall; next a part of this wall disappears and the rest increases by serpiginous growth, forming an arc on the convex border, of which alone the redness is to be seen. Finally both subside, leaving sometimes a pearly stain, sometimes slight pigmentation, sometimes no trace whatever.

Comparing the eczematous and erythemata from a therapeutical point of view, it is seen that in the former the local affection demands more attention than in the latter. In the eczematous, we have primarily to treat debility; in the erythemata, first to attend to the alimentary canal and then prescribe tonics. To this erysipelas might seem to present an exception, but the difference is more apparent than real, being mainly one of time. In chronic urticaria with neurotic phenomena small doses of arsenic may be found most useful. Absorbent powders are the chief local remedies for the erythemata. The itching of urticaria may require also sponging with hot water, the warm bath, and a lotion of emulsion of bitter almonds with borax, spirits of wine, and hydrocyanic acid.

The phlyctenous affections are represented at the College by models of pemphigus and herpes. In these the pathological state is trimorphic, the lesions of the skin being erythema, vesicle or bulla, and crust. It is strange that in some cases erythema subsides without leaving any mark of its presence, while in others it is followed by exfoliation of the cuticle, and in others by serous effusion beneath the epidermis, and even by suppuration and ulceration. The readiest explanation is that the difference is one of vital dynamics, of degrees of vital and nerve force. Pemphigus iris offers an instance of the transition from the erythemata. It resembles in general character erythema iris, with the addition of vesication. The central bulla may be surrounded by one or several vesicated rings. It is usually local, limited to the hands and feet, and associated with debility and with enteric disturbance.

In one case, of which a drawing was shown, the central bulla was surrounded by seven red rings, separated by paler circles; and round another spot in the same case were nine circles of different tints. The affection is often misnamed herpes iris. One of the specimens exhibited had been named by the French hydroa, from its bullous centre.

Pemphigus vulgaris is usually local, but occasionally, in cachexia and in severe cases, it is general. A model was exhibited from a servant girl who had died on the ninth day from the outset of an attack. The eruption was general, but most abundant on the extremities, the average size of the bullæ being that of an almond. It had occurred after the use of an ointment containing turpentine, which she had employed for a pruritus. At first there was little evidence of any general mal-nutrition, but she became delirious, and afterwards comatose. At the post-mortem examination the only morbid appearance was congestion of the mucous membrane of the small intestine. Pemphigus is always a grave disease, the occurrence of the blebs indicating a low vitality. The fluid contained in them is at first clear blood-serum, but it afterwards becomes opalescent and yellow from the development of pus-globules. Occasionally it is colored by blood, either from accidental friction or hæmatolysis, which betokens more or less advanced cachexia. Usually the retrogression of the bleb is simple, with or without the exudation of inflammatory products; but sometimes superficial gangrene occurs, and is succeeded by ulceration.

In conclusion, the lecturer glanced at the misapplication of certain dermatological terms, especially "lichen" and "herpes." The former, he said, which comes from *λίζω*—*lingere*, to lick—refers to something adhering to the surface, as the tongue to a glass plate which it is licking. It is correctly used by botanists, but there is nothing more opposed to the genius of the word than the group of pimples to which it is applied by the dermatologist. Again, herpes is derived from *ἑρπεω*—*serpere*—a word which has given us the adjective "serpiginous." Its character of creeping onwards by the circumference to the neighboring skin is one which the eruption of herpes entirely lacks.

LECTURE III.

Continuing his description of phlyctenous affections, the Professor first considered herpes. After alluding to its frequency, so much greater than statistics would suggest, and describing the characters of the eruption, he said that it is a good instance of the identity of disease in ancient and modern times, always having received the same names and awakened the same prejudices. We find expressed by Pliny the popular dread of the present day, that death will occur if the herpetic circle is completed. The groups of the vesicles correspond to branches of the cutaneous nerves. The slighter forms of herpes—as on the lip—are familiar to all; on the trunk the course is similar—puncta soon becoming vesicles, with contents at first clear, soon opaque, then yellowish, drying into a scab, which, falling, leaves a white cicatrix for the rest of life. From pemphigus it differs in its local distribution, the absence of any relation to cachexia, and its brief definite course. No part of the skin is free from the occurrence of herpes. The pain may be merely that of the local inflammation of the skin, or neuralgia may precede or follow it, and the neuralgia may

be prolonged, and last for months or years. Herpes may follow the course of large nerve-trunks, or as in *H. labialis*, that of the peripheral cutaneous twigs. It occurs more frequently along the intercostals than in the region supplied by the rest of the nerves; and it is more common on the left side, perhaps from communication between the affected nerves and the organic plexuses distributed to the stomach and digestive organs, and the morbid influence resulting from such intercommunication. The exciting cause is generally cold. As an affection of large nerve-branches it rarely occurs more than once in a lifetime. Connected with smaller nerve-twigs, in *H. labialis* and *H. preputialis* recurrence is the rule. Although it may never have been known to encircle completely the trunk at one particular zone, cases are on record where it has been simultaneous on both sides of the body, but in different regions. Although usually observed in a single region, and affecting only one or few nerves, Mr. Wilson has met with one case in which there were five separate tracts, each around a hemicircle of the trunk, between the collar-bone and the groin.

The treatment of herpes and pemphigus must correspond to the difference in their origin. Constitutional remedies, so essential in the latter, are, in the former, mere adjuvants to the local management, the chief point being the correction of any visceral disturbances with which it may be "sympathetic." Locally, in each, the dredging-box, and desiccant powders are needed, and, perhaps, oxide of zinc ointment rendered more cooling and gently stimulating by the addition of a little spirits of wine. The subsequent neuralgia may require strong sedatives; perhaps, when practicable, division of nerve trunks. In ulcerative herpes and cachectic pemphigus, local tonics may be necessary, powder of cinchona bark, carbolic acid in ointment, or a lotion of chloride of zinc, which give tone and counteract the tendency to decomposition and gangrene. For *H. zoster* a lotion of lime water and oxide of zinc answers best. *H. labialis* and *preputialis* may sometimes be checked at an early stage by painting with tincture of iodine.

The furunculous affections, *ecthyma*, *hordeolum*, *furunculous anthrax*, constitute the fourth group. Their special morbid characters are a degree of isolation, referable to the follicular origin of the disease, the deeper inclination of the skin in the inflammatory and pyrogenetic processes, and the tendency to gangrene and ulceration. The old dermatologists distinguished between pyodraconic pustules on the surface, mere vesicles with purulent contents derived from the rete mucosum, having no scar, and phlyzacious pustules, more deeply seated in the corium, originating in a follicle, deriving pus from the connective and other tissues of the substance of the skin, and leaving a cicatrix. The furunculous affections are of the latter form. Their treatment is that of a surgical affection of the skin, modified less by the peculiarities of the disease than the constitution or habits of the patient. Digestion, etc., must be put right, because a part will more rapidly recover its health with a healthy whole than with an unsound whole. Locally, some forms need merely palliation, others stimulation. In the early stage of a boil slight counter-irritation may occasionally arrest its progress. During the suppurative stage poultices may be necessary, and afterwards stimulating ointments, especially resin ointment.

The last group of common inflammations of the skin consists of the traumatic affections. Only four of these are represented in the College collection. One is the ulceration produced by the local contact of arsenical solutions—deep ulcers, coated on the surface by buff-colored lymph, bordered by a red margin, and surrounded by a purplish-red, thickened, and desquamating areola. The aniline dyes have also the property of exciting an inflammation of the skin having the characters of aggravated eczema, attended by considerable effusion beneath the epidermis. The progress is slow, and the dermatitis apt to recur at intervals of a few weeks for a considerable time. The last model exhibited was one of a peculiar eruption on the metacarpus of the thumb, whence a line of inflamed tubercles extended upwards to the axilla, the intervening spaces being pale-red. Unfortunately the model had no history attached to it, but the tubercles probably consisted of a glandular adenoid tissue developed from the lymphatics.

LECTURE IV.

In his fourth lecture Mr. Wilson commenced the consideration of the specific inflammation of the skin. He briefly described those exanthematous eruptions which are represented in the College collection : rubeola, scarlatina, and variola, and then passed on to consider some of the forms of syphilitic eruptions. Dermato-syphilis, he said, feels its way gradually in the integument. At first it is an erythema, then, by a process of growth, a papule is produced, of various breadth, and subsequently pustules or ulcers may occur. Thus three natural classes are formed, to which a fourth, the degenerative form, may be added. Erythematous syphilis may be general or local; as the accompaniment of the fever it is usually general—a corymbose exanthem like measles or in round spots and maculæ. It may be easily mistaken for rubeola or roseola, and hence it is inexpedient to call it syphilitic roseola, as is often done; dermato-syphilis erythematosa is a better term. Syphilis is essentially a disease of weakened nutrition; the blood-corpuscles seem to undergo decomposition, and the coloring principle to become diffused. Hence the altered pigmentation, the muddy tint of skin, and the copper or rather reddish-yellow brown color of the fading rash. Erythema is also the form of syphilis most common in the palm of the hand, characterized by redness, desquamation, and fissures. It resembles eczema, but usually one hand only is affected: there is no exudation; there is a tendency to recovery in the centre and growth from the border, and there is an absence of pruritus, an important diagnostic feature in syphilitic eruptions, which seldom proves delusive. The rash that accompanies a recurrence, after some weeks, of the syphilitic fever is usually attended with prominence of the congested follicles, producing the eruption of papular syphilis. The first impetus of the fever results only in dilatation of the capillaries; the second is accompanied also by transudation and increased bulk of the intervascular structures. The mechanism of the production of the papule and its growth is simply a continuation of the same process. Some papulæ go on enlarging till they form elevations more than an inch in diameter, and are called tubercles. Their pathological constitution is the same; the latter, however, indicating a more chronic stage of the disease. Desquamation occurs in both papular and erythematous syphilis. In both forms the mode of development and growth is the same—extension by the circumference, subsidence in the centre, until rings are formed. This is most characteristic in the erythema. In the papular form we sometimes find clusters, or blotches, without regular form, but they sometimes assume the shape of rings, or are distinctly annular in distribution. Further, the pustules and ulcers pursue the same mode of development and growth, often occurring in patches, which ulcerate first in the centre and subsequently extend by the circumference, forming annular or serpiginous ulcers of considerable extent.

LECTURE V.

The chief part of Mr. Wilson's fifth lecture was occupied by a description of the various models of syphilitic eruptions contained in the College collection. Incidentally he drew special attention to the varieties in extension and distribution of the morbid change, particularly as exemplified in the papular form. This usually manifests itself in concatenated rings of papulæ, or discoidal elevations, and the transition between the two is obvious. In each it is common to find the central prominence still remaining, and surrounded at a short interval by a circinate ring. The tubercular rash which commonly extends itself in this way has received improperly the name of "syphilitic lepra." The true way to regard it is as one of the physiological modes of manifestation of the pathology of the skin, for it is easy to show its physiological connection with the scattered form of papular eruption.

In successive attacks of syphilis the disease would seem to acquire an increased impetus, or possibly, with greater likelihood, the tissues lose their capability of resistance, and hence the increased intensity of its successive manifestations. There is an indication of a similar notion of succession in the use of the terms secondary and tertiary; but these divisions are arbitrary and

vague, and the four classes of skin eruption, erythematous, papulous, ulcerative, and degenerative, afford a much better basis for the classification of the periods of the disease. Mr. Wilson has seen no form of syphilitic eruption that could be called vesicular, apparent instances being really either papulæ vesicating on the summit, or papular tubercles suppurating on the summit, and indicating a commencement of the ulcerative period of the disease.

Passing to the ulcerative forms, Mr. Wilson described the characters of rupia—an ulcer with much secretion and dessication of that secretion into crusts, and the usual centrifugal extension of the morbid process beneath the crust. A common seat of the ulcerative process is the wall of the matrix of the nail, commonly the posterior wall, sometimes the whole matrix, leading to great swelling of the finger ends. The cachexia of syphilis is very decided. It destroys the corpuscles of the blood, probably converting their coloring matter into pigment; it induces emaciation, and gradually exhausts the constitutional powers.

The migratory or serpiginous character of some syphilitic eruptions is very marked. It is not peculiar to syphilis, but was seen in some of the groups of cutaneous affections before examined, being apparently due to a law of cutaneous disease, which syphilitic affections obey with the rest. The Professor, in conclusion, drew attention to and described the models illustrating this character, and also some representations of certain more chronic forms of the papular group.

LECTURE VI.

Professor Wilson, in his sixth lecture, first passed in review the regular course of syphilis. It obeys, he says, the same laws as the other animal poisons, and becomes milder the longer it remains in the body, and is also rendered milder by transmission from individual to individual. The ordinary varieties in the disease may all be explained by the influence of individual constitution. The disease known in Norway by the name of "radesyge" or "bad disorder," of which a terrible outbreak occurred a century and a half ago, is really a form of syphilis. A plaster cast was shown of a late syphilitic eruption, a pitted and ulcerated surface, the ulcers with ragged edges, and here and there of pathognomonic horseshoe form, which Dr. Boeck, of Christiania, had pronounced a characteristic example of radesyge.

After showing some models of syphilitic affections of the tongue, Mr. Wilson went on to speak of degenerative syphilis. In this a process goes on of a nature essentially the same as that which results in ulceration, though slower; the syphilitic tubercle leaves a scar just as does an ulcer, although there may have been no breach of surface. In the morbid change the affected part becomes swollen, and constitutes a tumor of greater or less dimensions, a "syphiloma" or "gumma." No organ of the body is safe from invasion; even the heart may suffer. The hairs may undergo a change, which consists essentially in an arrest of development of the hair at its cellular stage; in the portion so arrested there is a copious deposit of pigment.

The successful treatment of syphilis may be resolved into the two processes of elimination and restoration. A method once in great favor consisted in milk diet and clinical decubitus; another, still in vogue in Germany, is a combination of sweating, purging, and starving. One of the most successful cures Mr. Wilson has ever seen was affected in the course of a few weeks chiefly by infusion of elder-flowers, with jalap and low diet. But the two chief remedies must always be mercury and iodine, the former at the beginning and end of syphilis, the latter chiefly in the secondary stage. In infantile syphilis Mr. Wilson prefers to give the child perchloride of mercury, one-thirtieth of a grain three times a day, unless the mother shows evidence of affection, when the treatment may be through her. In secondary eruptions a mild mercurial may supplement the iodide. In giving the latter it is important to remember that it acts best when largely diluted; five grains should be dissolved in at least half a pint or, if practicable, in a pint of some bland fluid.

In conclusion, Mr. Wilson said that he could not take his leave without being reminded that that day was the anniversary of their great and distinguished

master, John Hunter, to whose comprehensive mind every work of the Creator was interesting and important, in whose sight nothing was too small for observation, and nothing created in vain. In all departments of the field of pathology his zeal and faith were equally energetic and pure, whether investigating what may be termed the physiology of pathology, as in his grand labors on the blood, inflammation, and syphilis, or morbid changes in the integument. He had left behind him in the splendid museum, which would forever be a chaplet to his fame, many valuable specimens of dermatological interest; and if his spirit were round them that day, they might hope that he would not look disapprovingly on their present occupation. No whole to him seemed perfect without the perfection of its parts, for the soul of Hunter was all-absorbing and universal.

ART. 64.—*On the Use of Phosphorus in Certain Diseases of the Skin.*

By H. EAMES, M.D.

(*Dublin Journal of Medical Science*, January.)

It appears that Dr. Burgess was the first physician who recommended the use of phosphorus in certain skin diseases, but Dr. Broadbent has recently given the same metalloid with good effect in some cases, and Dr. Tilbury Fox has also recommended its use; but Dr. Eames considers that phosphorus is much more than a substitute for arsenic, as some previous writers have regarded it, and he alleges that it has been used with marked success in certain cases in which arsenic has failed. The mode of administration adopted by him was a solution of the phosphorus in oil, and the dose of the solution was from five to ten minims three times a day after meals. Dr. Eames relates the particulars of several cases which were thus treated, and in all the results were successful. One was an instance of *acne indurata* of a most severe character, which had resisted all other local and general treatment; three of the cases were instances of *lupus*; and two of *scrofula-derma*. In *psoriasis* Dr. Eames found phosphorus very efficacious, even when arsenic had proved unserviceable, and he gives three cases in proof of this statement. A case of *pemphigus* was also cured by the use of phosphorus. Dr. Eames found that the drug produced a coated state of the tongue, and sometimes symptoms of dyspepsia, loss of appetite, mental depression, and bodily weakness; but, when these symptoms appeared, the phosphorus was discontinued for a time, and mineral acids substituted. Most of the cases recorded by Dr. Eames had been treated by arsenic and other drugs before they came under his care, and he regards phosphorus as far superior in efficacy to that and other vaunted specifics in skin diseases.

ART. 65.—*On the Treatment of the Itch in Children.*

By A. MONTI, M.D.

(*Centralblatt f. d. Med. Wiss.*, April, 1871.)

Upon the suggestion of Froehlich, the above author instituted some experiments upon the action of *copaiba-balsam* on the itch of children. He in the first place verified the fact that the freshly-captured itch-insect dies in from two to three hours when placed in *copaiba-balsam*. The balsam produces on the skin an active redness and burning, which disappear after half an hour, and with them also the troublesome itching. After three or four inunctions, spread over one or two days, the efflorescence of the skin grows pale. No disturbance of the digestion nor of the urinary organs was noticed in any of the cases. The duration of the treatment varies between two and twelve days. The scabies *nodosa*, without eczema, is the most readily healed—the balsam has no influence upon eczema or upon pustules. The balsam of *copaiba* is cheaper than that of Peru, is to be preferred on account of its more agreeable odor, and does not stain the linen.

Monti experimented with carbolic acid, employed either in solution (one to two drachms to one pound of water) or in the form of salve, ʒj to ʒiv unguent. simpl. After a preliminary washing, the carbolic acid is vigorously rubbed into the diseased parts of the skin. In scabies pustularis, poultices are used instead of the initiatory washing or baths. The redness and burning of the skin caused by the carbolic acid soon disappear. Any eczema present is speedily cured. The duration of the treatment is very short; as a rule, six to nine inunctions, in the space of two to four days, suffice; if eczema is present, the treatment is somewhat protracted. This method is much to be recommended for children.

ART. 66.—*Sulphate of Iron in Erysipelas.*

(*British Medical Journal*, Dec. 16, 1871.)

Mr. Hulke, at the Middlesex Hospital, has lately tested the great efficacy of iron sulphate in extensive erysipelas. He uses it as a lotion of ten grains to an ounce of water, applied warm on a rag; and believes it acts as a local styptic, astringent, and sedative, as well as a constitutional tonic. In circumscribed erysipelas on small surfaces, he applies the ordinary coating of collodion and castor-oil. He deprecates the application of flour to any part, as a source of dirt, blebs, and maggots. So many cases of erysipelas have lately occurred in and around the hospital, that he thinks it must be caused, in wounded and weak patients, by a deleterious atmospheric influence. What the nature of this influence is, he is unable to say.

ART. 67.—*Abortive Treatment of Erysipelas with Silicate of Potash.*

By Dr. PIAZZA.

(*L'Imparziale*, December 16, 1871.)

Dr. Piazza recommends as a local means of effecting the cure of erysipelas, the application of a somewhat concentrated solution of silicate of potash, which should be painted on the part affected in two or three successive layers. Dr. Piazza states that the use of silicate of potash has become quite a common practice in his hospital, with excellent results, without having recourse to any general or internal treatment. Dr. Figglioli has obtained equally good results by the same means.

ART. 68.—*Effects of Crude Paraffine on the Skin.*

By ALEXANDER OGSTON, M.D.

(*Edinburgh Medical Journal*, December, 1871.)

An affection of the hair-follicles is described by Dr. Ogston, which is caused by prolonged exposure of the skin to the action of the oily matter contained in this substance: the result being an eruption of nodules and pimples on the skin so exposed, speedily breaking out on those who are for the first time engaged in handling it, lasting for a few weeks or months, and then generally diminishing or disappearing. In the few cases in which it becomes chronic, a change of employment is a necessity. The mark of difference between the acute and chronic forms is the presence of inflammatory action in the former. A minute examination of the skin in the former variety shows bright-red nodules, which are hard to the touch, tender on pressure, varying little in size, which is about equal to that of a grain of barley, are of a rounded form, and consist each of a single hair-follicle, with the surrounding parts red and inflamed. A hair emerges from the summit of one of these follicles, the orifice of which is enlarged to the size of a pinhole in a card. This dilatation extends to the deeper part of the follicle, which is filled with a dry and friable mass of epithelial scales and dirt. In the chronic form the hairs have been atrophied and destroyed by pres-

sure, and the skin affected presents the open mouths of these distended follicles, sometimes large enough to admit the end of a probe, the skin, including those raised patches of eruption, being of natural color.

The *modus operandi* of the crude paraffine in producing this eruption seems to be that the oily matter in the shale called "blae oil," is irritating to the skin; and, coming continually in contact with the epidermis, soaks into the hair-follicles, where it causes an increased growth of epithelium, which is not counterbalanced by increased expulsion of the scales, owing to the fatty matter from the sebaceous glands being dissolved out and removed by the "blae oil," thus leaving the brittle mass of epithelium to plug up the follicles. Parts of the skin not supplied with hair-follicles are not affected.

ART. 69.—*On Herpes Zoster Ophthalmicus.*

By M. JOSEPH KOCKS.

(*Inaugural Dissertation. Bonn, 1871; Schmidt's Jahrbücher, No. 11, 1871.*)

The author has collected and statistically arranged reports of eighty cases of this affection. The sex is given in seventy-four of these cases, of which the subjects in forty-seven cases were males, and in twenty-seven females; the ages of seventy-one patients were as follows:—between one and ten years, five cases; between ten and twenty years, ten cases; between twenty and thirty years, eleven cases; between thirty and forty years, five cases; between forty and fifty years, ten cases; between fifty and sixty years, eleven cases; between sixty and seventy years, fourteen cases; between seventy and eighty years, four cases; and between eighty and ninety years, one case. In the great majority of cases the previous condition of the patient as to health, was stated to have been good. In thirty-one cases the affection was preceded by certain neuroses, especially neuralgia, and on one occasion by irritation of the eye. With regard to the side of the face on which the herpes was found, it was stated to have occurred on the left side in forty, and on the right side in twenty-eight out of sixty-nine cases, and in remaining case on both sides. In many cases reliable reports are wanting with regard to the nerve-twigs involved; no mention is made of the frontal nerve, from which the affection has its name. The nasal nerve was affected in twenty-three out of thirty cases. An accompanying affection was observed in forty-six cases, in thirty-four cases it was absent. In twenty cases the cornea alone was affected, in fifteen cases the conjunctiva, and in fourteen cases the iris was the structure affected, in ten of which cases the cornea also was involved. It is shown in seven cases that the ocular affection is not necessarily connected with the extension of the disease along the course of the nasal nerve, as it may occur without the latter phenomenon, or, again, the latter phenomenon may be present and the orbit yet remain unaffected. The most frequent of the persistent sequelæ were corneal cicatrices (in one-half of the cases) and corneal opacities. In some few cases the neuralgic pains remained. Loss of the eye is a very rare result.

ART. 70.—*Herpes Impetiginiformis.*

Under the care of Professor HEBRA, at the General Hospital, Vienna.

(*The Lancet, March 23.*)

The following account of a rare form of skin disease occurring during the course of pregnancy will be read with interest.

At the beginning of last June, a woman, twenty-five years old, and in the ninth month of pregnancy, was admitted into Professor Hebra's smallpox ward, under the supposition that she was suffering from varioloid. She had been ailing for three weeks, but her illness had only taken an acute course a few days previously. It began with lassitude and loss of appetite; she soon became so weak as to be unable to leave her bed, and had fever and repeated

rigors. It was soon found that her disease was not smallpox, and she was transferred to a ward for general skin affections. At this time the character of the eruption was clearly marked. At the root of the neck, on the front of the chest, over the sternum, and around and between the mammæ, groups of small vesicles had formed on an inflamed base. The vesicles had enlarged; their contents became cloudy and yellowish; a number of vesicles had coalesced, and, bursting, had formed brownish-yellow and adherent crusts. The skin around the vesicles was intensely inflamed. The eruption had first appeared on the external genitals. The labia majora, mons veneris, and the neighboring skin of the abdomen, and inner part of the thighs were, on the date of the patient's transference to another ward, covered with large, yellowish crusts, and vesicles in various stages of development.

In the course of the following week, groups of similar vesicles appeared on the face, over the whole chest and abdomen, on the arms (where the patient complained especially of severe pain), and on the front of the thighs and legs. Thus rather more than a fortnight after admission, the eruption had reached its height, and the front of the body was almost entirely covered with yellowish crusts; these began to dry up and exfoliate, first at the root of the neck, without the occurrence of ulceration and loss of substance.

At this time were found near the ankles several large bullæ, containing slightly cloudy fluid, resembling those of pemphigus. The patient, who had some days previously complained of "cold along the back," and had a pulse of 96, began to feel warmer; her pulse was found to be 92. She had repeated rigors, and was so weak that she could not raise herself in bed. No observations were made of her temperature. Her treatment throughout was mainly expectant; she was allowed chicken and wine, and anything she fancied. For the pyæmic symptoms she took quinine, and a lotion composed of six grains of perchloride of mercury and one pint of lime-water was applied to the genitals. As the pain prevented her sleeping, she was ordered half-drachm doses of chloral hydrate at night. On June 15th, Professor Hebra had, as an experiment, her left leg bandaged with strips of diachylon plaster, but without any striking result.

On June 17th, the patient was safely delivered of a healthy child. This was her second pregnancy; in the first she miscarried. On the 19th she was going on well; was cheerful, and the lochia were normal. The eruption was scaling around the neck. On July 5th, she had a slight attack of hospital dysentery, and was treated with tincture of perchloride of iron in fifteen-minim doses three times a day, and with dilute sulphuric acid. At this time she had no signs of any fresh eruption and was scaling rapidly. On July 25th, when the last note was taken, she was almost convalescent; her face (which was the part least affected) was quite normal, as also her chest, and the remainder of her body was rapidly becoming free from scales.

In some remarks upon this case, Professor Hebra said, that, in his very considerable experience, he had only as yet seen five such cases, of which this was the fifth. They all occurred in women at full time except one, which took place during the course of pregnancy; the first four all terminated fatally. They all resembled one another in beginning in the region of the genitals; in their general diffusion over the body in a later stage; and in the herpetic character (groups of vesicles on the same inflamed base) which they presented. They were all accompanied by fever and rigors. The disease might be called "herpes impetiginiformis" from the appearance of the crusts. There was no restriction to the course of certain nerves as in an ordinary zoster. Finally, it was a most dangerous disease.

ART. 71.—On Syphilitic Alopecia.

By M. ALFRED FOURNIER.

(*Annales de Dermatologie et de Syphiligraphie*, No. 1, 1872.)

"The only symptom constituting this affection is falling of the hairs, for no other phenomenon is ever associated with it. The hair falls, and this is all.

Syphilitic alopecia in fact is absolutely indolent, and is not accompanied by pruritus, local heat, or itching.

"With regard to situation it is remarkable by having no fixed special localization; a negative peculiarity which differentiates the syphilitic from other forms of alopecia. Thus it is produced almost indifferently over all parts of the cranium, over the sinciput as well as over the temporal regions, at the back as well as over the front. The whole scalp is its domain.

"With other forms of alopecia, on the contrary, a special region is affected, and in this, to the exclusion of every other the affection is concentrated. Senile calvities, for example, is invariably limited to the front of the head, and respects the lateral or posterior parts. There is nothing like this in the alopecia of syphilitic origin.

"Let me add also that many forms of alopecia of diverse origins proceed with a truly symmetrical regularity, and decimate the scalp to an equal extent on both sides. It is quite the reverse with syphilitic alopecia, which affection being essentially irregular and capricious, observes no symmetry, and affects in a most irregular fashion the homologous parts of the cranium.

"With regard to form, syphilitic alopecia presents itself under two aspects. It sometimes thins the hair in an almost general fashion. The hairs are then less abundant, and not so thickly set. At other times it is concentrated in a series of small patches disseminated over the hairy scalp, which it decimates to denudation, respecting, relatively at least, the adjacent parts.

"Both these forms of alopecia are very common. The latter is most frequently observed when the scalp has been much affected by syphilis. It is this form also which impresses on syphilitic alopecia its most special character. These two forms frequently co-exist and are observed associated on the same subject.

"Syphilitic alopecia may be more or less intense, and may be arranged in four degrees.

"1. In the majority of cases, especially in those where the diathesis has been treated in good time, there is only a slight falling of the hair. The depilation is not sufficiently advanced to become apparent.

"2. It often occurs however that alopecia acquires a greater degree of intensity, and then can scarcely fail to escape observation. The hairs fall in profusion. The patients at last cease to comb the hair. The passing of the hand merely among the hair suffices to detach a dozen or more.

"3. The alopecia sometimes, though much less frequently, is still more exaggerated and becomes excessive. Here we have at the same time both general thinning of the hair and disseminated islets where the scalp appears to be quite smooth and white.

"4. Finally, and in quite an exceptional fashion, the alopecia may be *total* or almost so. All the hairs fall or there remains but an insignificant number. I have observed this in only one case. The patient, who was a young woman, had after a severe attack of syphilis, lost all her hair. I exaggerate, however, in saying *all*, for one day I counted seventeen hairs on the scalp. I should state that this extreme degree of syphilitic alopecia is in the opinion of all authors extremely rare and almost unheard of in the annals of science.

"Let me state also as a last detail that syphilis does not always restrict its action to causing a falling off of part of the hair. It very often impresses on those which remain, those which do not fall off, some singular characters, which though scarcely noticed by men, do not escape the coquetry of woman. The hairs under the influence of the diathesis sometimes lose their normal *lustre*; they become dull, dry and woolly, and resemble dead or false hairs. As M. Diday has justly remarked, 'the patient though wearing his own hair seems to wear a wig. One of my female patients lately complained to me of this unusual condition.' 'I do not know what is the matter with my hair,' said she; 'I attend to it carefully and grease it with oil and pomade, but still it is always dry, rough, and dull.'

"Syphilitic alopecia is never a permanent affection. It may last for some weeks, generally for several months, and occasionally for a year or longer. It then yields and finally ceases. Even without treatment it may be arrested, as has been proved to me by a number of my patients who have not submitted

themselves to treatment until at an advanced stage of the diathesis. After the arrest of the alopecia it always and invariably happens that fresh hairs grow, that the denuded patches are refurnished, and that the hairy scalp finally returns to its normal condition, it being understood that the hairy scalp has not been injured by deep and veritably ulcerative lesions. With this reserve, the ravages of syphilitic alopecia are always repaired, and even the most severely affected patients have their hair entirely restored.

"I would remark for a few moments on some prejudices existing in society with regard to the origin of certain forms of calvities. And here is one of the most accredited of these. In speaking of a bald man, the ungraceful remark is often made that "the baldness has been produced by the venereal disease." This calumny is not supported by facts. For, indeed, *venereal disease never does make men bald*. Never by his own fault alone can a man become bald. Syphilis, indeed, may give rise to temporary baldness, as in those exceedingly rare cases of syphilitic alopecia degenerating into veritable calvities; but the baldness lasts but for a time, and the hair soon grows again, and the head is again furnished as before.

"We see daily numerous examples of this restoration of the hair after syphilitic depilation. Very many of my patients, who had lost more or less of their hair, and some who had even become almost quite bald, when returning to me for some other cause were found to possess very abundant hair, with which, and most of them were females, they were well contented. The patient who had no more than seventeen hairs on her scalp, has now a very fine head of hair, although she has not always followed her treatment with exemplary strictness.

"Very frequently we are spectators of this reparative process. In many of the patients who remain in the wards for some time we may see, after an attack of syphilitic alopecia, the hairs spring up again and increase rapidly in size.

"This restoration of the hair sometimes commences before the syphilitic diathesis has been attenuated in its principle or arrested in its evolution. Very frequently the alopecia is arrested and becomes repaired even when other specific symptoms arise or are about to rise. It is necessary then to consider baldness, like many other manifestations of the same nature, as a *transitory* symptom of syphilis, in which is involved but a certain duration, as an affection analogous, for example, to precocious syphilis; as an affection, finally, which disappears and is repaired after a time, without compromising in any way the future course of the disease or interfering with the ulterior evolution of the diathesis.

"From the above remarks it results that syphilitic alopecia, that form of baldness which afflicts so many patients, women especially, is not really a serious affection. It is a lesion essentially temporary, insignificant in itself, and causing some inconvenience or trouble for a time, but one which is always repaired, and followed by no bad results. Syphilis is not among those diseases from which may be derived persistent calvities.

"*Treatment*.—1. Syphilitic alopecia does not require any local treatment. 2. Time and proper general treatment are amply sufficient to enable one to deal successfully with this lesion, which is essentially transitory."

ART. 72.—*Report of a Case of Purpura.*

By E. D. MAPOTHER, Surgeon to St. Vincent's Hospital.

(*Medical Press and Circular*, April 10.)

At a meeting of the Surgical Society of Ireland on March 5th, Dr. Mapother mentioned a case that had greatly interested him, in the hope, that he might elicit some information respecting it from their friend Mr. O'Grady. It was a case of a commissioner, whom he had known for many years in connection with one of the clubs, and four years ago Mr. O'Grady had operated on his upper extremity through the shoulder joint, for malignant disease of the humerus. For the last three or four months the man had been suffering from purpura of his lower limbs. He could never rise from his bed that a large

number of purpuric spots did not break out under the cuticle. Dr. O'Grady and he (Dr. Mapother) had seen the man several times, but they could not arrive at any conclusion as to the cause of the phenomenon. There was no hemorrhage, but the enormous quantity of blood shed under the cuticle was undermining the man's health. He had passed, when a soldier, many years of his life in India, and suffered from hepatic disease. He presumed that the result was a condition of the liver which might delay the circulation through the portal vein and the vena cava. That was the only way he could account for the purpuric spots in this case. He might remark, in connection with this matter, that the terribly fatal character of the smallpox in the present epidemic, was owing, in a great measure, to hemorrhage or effusion of blood.

Mr. E. S. O'Grady said he had very little to say about the case, which was that of an extern patient, and he had been unable at the time to come to a satisfactory conclusion in his own mind respecting it. Dr. Mapother had forgotten to mention that there were some of these purpuric spots on the man's forearm. He also had disease of the supra-renal capsules. He did not bleed much during the operation through the shoulder joint, and the axillary artery was secured by acupressure. An occurrence took place some days after the amputation of the arm which was worth mentioning. The stump was greatly swollen, and one of the sutures having been removed to give vent to the fluid, a considerable quantity escaped, evidently the secretion of the remaining portion of the capsule, and this fluid was deeply tinged with blood. There was no bleeding afterwards.

Dr. Fleming said that, at the time of the first establishment of the fever-sheds in 1847, he had noticed many cases of smallpox complicated with purpura.

Dr. Minchin observed, that in corroboration of the remarks of Dr. Fleming, he had seen a number of these purpuric cases as complications of smallpox, during the latter months of the year 1847. He had also a distinct recollection, that in the same year, many cases of the epidemic typhus which prevailed, were accompanied with purpura. Among the cases that came under his care at the Temporary Fever Hospital, Glasnevin, at that time, there was one in which a young woman sank on the 7th or 8th day from the effects of abortion; in that case the post-mortem examination revealed a purpuric condition of the heart, pericardium, and peritoneum; the fetus, which had been expelled, was also found thickly covered with purple spots.

ART. 73.—*Pemphigus Produced by the Administration of Iodide of Potassium.*

By FREEMAN J. BUMSTEAD, M.D., Clinical Professor of Venereal Diseases at the College of Physicians and Surgeons, New York.

(*American Journal of the Medical Sciences*, July, 1871.)

The following case, the first of the kind Dr. Bumstead has ever met with, deserves, from its rarity, to be placed on record:—

"W. F., aged twenty-eight, Irish, entered Ward 10, Charity Hospital, December 21, 1870. His venereal history, as given by himself, was imperfect. He acknowledged having had gonorrhœa eight years ago, and again six years ago, but denied having had any sores upon the genitals, or any of the ordinary early secondary symptoms of syphilis. Fourteen months ago he began to suffer from 'swelling of the feet and pains in the tibiae, felt chiefly at night.' Last February, ecthymatous ulcerations made their appearance upon the legs, and one was situated over right patella; it was for these that he sought admission to the hospital. The interne of the ward prescribed for him, on December 23d, a mixture containing twenty grains of the iodide of potassium, to be taken twice daily.

"On the evening of the following day, after having taken only three doses, the patient complained of heat, and a burning sensation in his face and hands, which were observed to be reddened, and the medicine was at once discontinued.

"I saw him for the first time on the afternoon of the next day, December 25th, and found him in a decidedly cachectic condition, with small purpuric spots

thickly covering his feet and the lower portions of his legs. But the eruption to which I desire to call attention, and which had made its appearance since the evening before, was one of very large bullæ, some of them an inch and a half in diameter, situated upon the back of the neck, the forehead, the face, and upon the backs of the hands—in other words, upon those portions of the integument which were exposed to the air. Some of these bullæ were filled with a clear serum, others were turbid, and of a reddish or purplish color from the admixture of blood, while the skin around them was somewhat reddened and œdematous. In the course of a few days, most of them had become ruptured and were drying and disappearing.

"In evidence of the fact that this eruption was produced by the iodide of potassium, the patient reported that on three previous occasions during the last year he had taken the iodide at the recommendation of different physicians, and always with the same unpleasant result. After the disappearance of the eruption he has felt better, and his syphilitic symptoms have improved."

ART. 74.—*On Lupus Erythematosus.*¹

By MORITZ KOHN, M.D.

(*Allgemeine Wiener Medizinische Zeitung*, No. 49, 1871.)

In the year 1845 lupus erythematosus was regarded as being merely congestive seborrhœa. About twenty years ago the characteristic signs were strictly defined for the first time by Cazenave and the diagnosis therefore considerably promoted. The greatest attention however has hitherto been paid only to the local symptoms of this exanthem. In late years it has been proved by close investigation, that in many cases lupus erythematosus is combined with general and sometimes life-menacing symptoms.

Dr. Kohn thinks it especially necessary to distinguish two forms of the eruption. The first is the *circular* form, to which he would give the name of lupus erythematosus orbicularis. This form is generally seated on the face. It presents in the centre a cicatricial depression; and there is protuberant thickening containing hypertrophied and dilated follicles.

It has recently been learnt from clinical experience, that it may at times, though very rarely, present itself on the fingers and toes and also on the trunk. The second is the *aggregated* form. Here the eruption no longer appears to be circular. This may be described as lupus erythematosus aggregatus. The chief distinction between the two forms consists in the facts that in this form the disease most frequently takes a chronic course and that the general condition is but slightly or not at all altered. One has here to deal with local symptoms when the eruption is associated with burning pains and itching.

The aggregated form of lupus erythematosus takes quite a different course. Sometimes, indeed, it is a chronic affection, but most frequently it consists in a subacute or acute eruption, which is associated with fever and dangerous symptoms, and may even end seriously. This form of efflorescence therefore in relation to prognosis is to be regarded with suspicion.

In some cases of acute eruption there may be felt in the deep parts of the integument painful tubercles varying from the size of a bean to that of a hazelnut, which gradually involve the whole thickness of the skin and those of primary lupus eruption attack the surface of the skin.

In other cases the acute eruption is accompanied with rheumatoid articular pains, chiefly in the wrist, elbow, and knee-joints. There may also be osteo-copic pains in the tibia and other long bones, which may cause this disease to be regarded as syphilis and to be treated by anti-syphilitic remedies, but with no good result.

In three cases the eruption was associated with hemorrhagic spots and vesicles. The most unfavorable complication, however, is that of erysipelas, which

¹ Communicated to the Gesellschaft der Aertze, Vienna.

frequently takes the form of erysipelas faciei migrans, and ends fatally. In other cases the eruption is associated with adenitis. In one case Dr. Kohn observed parotitis and adenitis of the maxillary gland.

The eruption may also be complicated by fever and typhoid and comatose symptoms. In other cases again there seems to be a close connection between the skin affection and chlorosis or tuberculosis, and then the amelioration of the general affections is followed by an improvement of the local symptoms.

Dr. Kohn resumes by stating that two different forms of efflorescence must be distinguished, one presenting itself as lupus erythematosus orbicularis, the other as lupus erythematosus aggregatus. It not unfrequently occurs, however, that these two forms are associated together. The affection occurs more frequently in women than in men. In 22 cases recently observed, 15 women were affected and 7 men. Six cases were fatal. The post-mortem in three cases revealed pulmonary tuberculosis, in two cases pleuritic exudation, and in the remaining case hydrocephalus and arachnitis.

With regard to the pathological anatomy, Dr. Kohn confirms Neumann's assertions. The sebaceous and sudoriferous glands were found to be in a state of atrophy and also the connective tissue of the skin. With regard to treatment, the local use of tar and quicksilver was relatively the most successful.

SECT. III.—FORENSIC MEDICINE.

ART. 75.—*On the Distinctions between Edible and Poisonous Mushrooms.*

(*The World of Science*, December 10, 1871.)

A writer, under the initials W. G. S., gives the following concise account of the difference between the edible mushroom and the poisonous fungi resembling it. First and foremost, the true mushroom (*Agaricus campestris*) is invariably found among grass in rich open pastures, and never on or about stumps or in woods. Many cases of poisoning have occurred owing to the supposed mushrooms being gathered from stumps or in woods. It is true there is a certain variety found in woods and woody places (*A. salvicola*), but as far as amateurs are concerned, it is best left alone. A second very good point is the peculiar intense purple-brown color of the spores (which are analogous to seeds); the ripe and fully-matured mushroom derives the intense purple-brown color (almost black) of its gills from the presence of these innumerable colored spores. To see these spores, and to become acquainted with the peculiar color, remove the stem from a mushroom, and lay the upper portion, with the gills lowermost, on a sheet of writing paper; in a few hours the spores will be deposited in a thick, dark, impalpable powder. Several dangerous species, at times mistaken for this mushroom, have these spores umber-brown or pale umber-brown in color, and belong to *Phaliota* or *Hebeloma*. There are innumerable varieties of the true mushroom (and of the horse mushroom), but all are equally good for the table. Sometimes the top is white and soft, like kid leather; at other times it is dark-brown and scaly. Sometimes, on being cut or broken, the mushroom changes color to yellow, or even bright red; at other times no change whatever takes place. But observe, the mushroom always grows in pastures; always has dark, purple-brown spores; always has a perfect encircling clothy color, and always gills which do not touch the stem, and a top with an overlapping edge.

ART. 76.—*Recovery after Swallowing One Hundred Grains of Chloral.*

By B. BROWNING, M.R.C.S.

(*British Medical Journal*, December 2, 1871.)

Mr. B. Browning records the following case of this: "An anæmic middle-aged woman, while suffering from facial neuralgia, swallowed, at one draught,

a recently-prepared syrupy solution of chloral hydrate, which contained over 100 grains of that drug. She immediately complained of 'intense burning pain in the throat, gullet, and stomach;' and when I saw her (about three-quarters of an hour subsequently), she was screaming, and almost convulsed with agony—so much so, that it was with the greatest difficulty she could be restrained from throwing herself out of her bedroom-window into the road. Her pulse was small and very rapid; the countenance was livid and bathed in sweat; an odor of chloroform was plainly perceptible in the breath, and no trace of narcotism had been observed, even for a moment. After an ineffectual attempt to bring on vomiting, I injected hypodermically half a grain of morphia over the epigastrium, and directed milk to be freely given. On visiting her in three hours' time I found her somewhat relieved, and accordingly injected another half grain of morphia, and suggested the cautious use of stimulants with the milk. On the following morning she was free from all pain of any description, though very weak, and has since done well; a slight return of neuralgia being at once checked by another employment of the hypodermic syringe and feruginous tonics.

"The usual hypnotic effects of the chloral were here 'conspicuous by their absence' from first to last; no drowsiness even, much less sleep, having set in during the period of its elimination from the system; yet in a previous neuralgic attack, twenty grains only had procured a good night's rest for this person. I can vouch for the amount, as well as the goodness, of the chloral taken by her; and think that, as deaths have been reported after the administration of sixty, forty-five, and even twenty-five grains of this remedy, she may be deemed fortunate in escaping so readily."

ART. 77.—*Phosphorus Poisoning Cured by Oil of Turpentine.*

By Dr. LICHTENSTEIN.

(*Berlin. klin. Wochenschr.*; and *American Journal of the Medical Sciences*, July, 1871.)

Dr. Lichtenstein reports the case of a girl, nineteen years old, who cooked a steak of meat with the heads of eight friction matches, and partook of the same for food. Soon after—precise time not given—she was attacked with a pain in the stomach, and vomiting of phosphorescent matter, mixed with coagula of blood. Twelve drops of *Ol. Terebinthinæ* in milk being administered, the pain in the stomach and vomiting ceased. Subsequently the vomiting returned, the discharges presenting traces of blood, but none of phosphorus. An emetic of ipecacuanha and tartrate of antimony was given, and the turpentine in barley-water continued. The vomiting now became almost entirely free from blood, till at the end of two hours the only complaint made was loss of appetite; no other symptoms. The case is adduced by Dr. Lichtenstein as a further evidence of the correctness of the reports of Personne, Andans, Köhler, and others, in favor of oil of turpentine as an antidote against poisoning by phosphorus. In a comment upon the report of Dr. Lichtenstein and his conclusion, Dr. Schultzen remarks, that during the past few years he has observed, in the wards of the Berlin Charité, some thirty to forty cases of phosphorus poisoning, of which nearly one-half terminated favorably, notwithstanding no oil of turpentine was given. The prognosis of a favorable event is to be based solely upon the occurrence of a free vomiting, either spontaneously or induced, soon after the poison has been taken. In Dr. Lichtenstein's case, vomiting set in immediately after the phosphorus was swallowed; and, according to Dr. Schultzen, to this is to be mainly, if not entirely, attributed the safety of the patient.

SECT. IV.—THERAPEUTICS.

ART. 78.—*Clinical Thermometry.*

By LUCIUS D. BULKLEY.

(The Medical Record, April 1.)

At a meeting of the Medical Society of the County of New York, February 26, Dr. Lucius D. Bulkley read a long and elaborate paper upon this subject, illustrated by numerous mural diagrams and tables. The paper was based on the essay to which was awarded the Stevens' Triennial Prize two years ago, and its purpose was not to present a history of clinical thermometry, or an epitome of what it had accomplished, but rather to contribute new data for the thermometrical study of disease, in a systematized record of the experience of the New York Hospital for the three years prior to August, 1869, and to state briefly the conclusions which that experience tended to establish.

The number of cases in which a record of temperature was regularly kept amounted to 337, classified as follows: typhoid fever, 93; typhus fever, 23; pneumonia, 64; erysipelas, 24; acute rheumatism, 17; remittent fever, 12; intermittent fever, 7; scarlet fever, 7; phthisis, 19; acute meningitis, 9; tonsillitis, 7; peritonitis, 6; miscellaneous, 49. Besides the temperature, the pulse and respiration were always recorded, and the doctor had tabulated all the cases under each disease with reference to these three vital signs. Forty or fifty of those most interesting, either from their typical character or from some other circumstance, were given in detail, with diagrams showing the curves of the three signs. Each diagram was the record of an actual case, and faithfully exhibited every failure of observation; there were no typical curves made up from the generalization of many cases, as in Wunderlich's book.

The nature of the paper precludes any extended extract, but we hope to see it published as a monograph. It is quite time that the wealth of experience, so long carefully hoarded in the case-books of the New York Hospital, should be brought out for the use of the profession. We here confine ourselves to the doctor's concluding summary of the chief points he considers established:—

"1. The body heat is maintained in health, under all conditions, at the uniform standard of 98.4° Fahr.

"2. Any constant deviation from this constitutes disease.

"3. A return to and continuance at this standard marks the determination of the disease.

"4. A single high temperature is important.

"5. The changes of temperature in diseases follow definite and known courses.

"6. Variations from these typical ranges of temperature in disease are significant, as indicating a disturbing cause.

"7. An irregular course is more unfavorable than a uniformly high range of temperature.

"8. Different temperatures characterize different diseases, and various days of the same disease.

"9. Although a high temperature indicates a more severe attack, no heat under 109° can be considered surely fatal.

"10. The daily study of the pulse and respiration in connection with the temperature is of great assistance.

"11. When the temperature and general symptoms agree, but the pulse disagrees, the two former are to be relied on.

"12. When the pulse and general symptoms agree in indicating unfavorably, the temperature cannot be relied on, if contradictory, unless the improvement in respect to temperature is marked and persistent.

"13. When pulse and general symptoms agree in a favorable indication, a high or rising temperature should arrest attention.

"14. All other means of investigation should be used in connection with the temperature to obtain the greatest benefit from the latter.

"15. The continuous daily record of the three vital signs here represented, in the way exhibited, affords much aid in the diagnosis, prognosis, and treatment of disease, by the presentation to the eye of its history in these respects.

"16. The systematic record of these three points may assist in determining, at some future day, the vexed question whether the type of disease is changing, by preserving pictures which can be easily compared."

ART. 79.—*The Administration of Stimulants.*

By Dr. LIONEL S. BEALE, F.R.S., Fellow of the Royal College of Physicians; Physician to King's College Hospital.

(*Medical Times and Gazette*, March 2, 1872.)

In his lectures on the principles of the treatment of fever, Dr. Beale says, if at the outset we have any reason to apprehend that an attack of fever is going to be severe, it is very desirable to administer small quantities of alcohol early in the disease. In this way the stomach may be accustomed to the remedy; whereas, if its use is postponed until the patient is very ill, and alcohol required in very large doses, the stomach is often in so highly irritable a state as to reject it. The patient's life may be in jeopardy from this circumstance, or fatal exhaustion alone may actually destroy him.

Of giving Alcohol to Young Persons.—Dr. Beale's conclusions as regards giving alcohol to the young are in the main not at variance with the opinions of those who advocate extreme temperance. His own experience leads him to believe that the majority of young healthy people would do well without alcohol; and he believes the habitual daily consumption by young persons—even of a moderate quantity—of wine or beer, is quite unnecessary, and mere waste, while in some instances it is positively injurious to health. At the same time, there can be no doubt that in certain cases where the health fails in children, and even in infants, great benefit results from giving small quantities of wine daily for a short time. Hard-working people, students, professional men, and people actively engaged have been advised to take stimulants, as a general rule—and some, no doubt, require them; but Dr. Beale believes many would enjoy very good health without any alcohol at all, while the recommendation that they should take plenty of claret or other light wine is bad advice for several reasons. Not only is a bottle of light wine not required, but in many cases it is actually injurious. That people who can get it will often take a bottle of light wine, and more, is quite certain; but that they require it, or that it is good for their health, will not bear discussion.

Up to the age of forty very little stimulant is, as a general rule, really desirable for healthy persons, and Dr. Beale expects most people of average health would get on better without any. His own personal experience, he writes, is this:—He was "never very strong, though always able to get through a very considerable amount of physical exertion without suffering from fatigue. Up to the age of forty I hardly ever touched stimulants of any kind, and when I did take a little I not unfrequently experienced an attack of sick headache before my ordinary condition of health was restored. Lately, however, I have found the advantage of half a tumbler of ale daily; and I can bear half an ounce and sometimes three or four ounces, of wine without suffering. I dare say, as I grow older, I may, like most persons, require a little more; but when in the country, and taking plenty of exercise, I feel very well and contented without any stimulants whatever. The experience of some members of my family who have lived to be old, and that of many persons of whom I have inquired, accords with my own. In old age, I believe, stimulants are really necessary, and sometimes are even more important than food itself. I feel sure the life of many old people is prolonged by the judicious use of alcohol, and I think that some, who have been very careful all through life, take far too little stimulant when they grow old."

ART. 80.—*Elimination of Alcohol.*

By A. DUPRÉ, M.D., Assistant Physician to the Westminster Hospital.

(Medical Times and Gazette, February 17.)

Dr. Dupré has recently presented a very important paper to the Royal Society "On the Elimination of Alcohol." Obviously, one of three results may follow the ingestion of that liquid—either all the alcohol may be oxidized, and none eliminated unchanged; or a portion only may be oxidized, and the rest eliminated unaltered; or all the alcohol may be eliminated unchanged. If all the alcohol be eliminated unaltered, it follows that if a certain amount of alcohol be administered daily, the quantity eliminated would increase from day to day, till eventually a state of equilibrium would be attained, and the amount eliminated each day would equal the amount ingested. If, on the contrary, all the alcohol were either oxidized or eliminated within a period of twenty-four hours, no increase in the daily elimination will take place as a consequence of the alcohol diet. The author undertook two series of experiments, in which the quantity of alcohol eliminated by both kidneys and lungs was determined. His results are thus summed up: "The amount of alcohol eliminated per day does not increase with the continuance of the alcoholic diet; therefore all the alcohol consumed daily must, of necessity, be disposed of daily; and as it certainly is not eliminated within that time, it must be destroyed in the system. The elimination of alcohol, following the ingestion of a dose or doses of alcohol, ceases in from nine to twenty-four hours after the last dose has been taken. The amount of alcohol eliminated, in both breath and urine, is a minute fraction only of the amount of alcohol taken."

Dr. Dupré confirms M. Lieben's observation that a substance exists in the urine of man, and in the urine of various animals, which is not alcohol, though it yields iodoform. The author found, that, after six weeks of total abstinence, and even in the case of a teetotaler, this substance, the precise nature of which has not been determined, is eliminated in the urine, and perhaps also in the breath. The quantity met with in the urine is very small, and it was found that after the elimination due to the administration of alcohol had ceased, the amount of the substance eliminated in a given time at first remained below the quantity normally excreted, and only gradually rose again to the normal standard. The presence of this body in urine must throw great doubt on many of the previous determinations of alcohol in urine. It passes over with the first portions of the distillate, it yields acetic acid on oxidation, gives the green reaction with bichromate of potash and sulphuric acid, yields iodoform, and its aqueous solution has a lower specific gravity and a higher vapor tension than pure water.

ART. 81.—*Bichloride of Methylene.*

By F. SEARLE, M.R.C.S.

(Dublin Journal of Medical Science, February, 1872.)

Mr. F. Searle adds his testimony in favor of this anæsthetic. In 1870 he administered it to more than 100 cases in the West of England Eye Infirmary, and has since used it in private practice. He has given it in all ages, from 6 months to 70 years, without a single cause for alarm, vomiting even being exceptional. It is important not to allow the patient to escape from its first influence, otherwise excitement ensues.¹ In Padua, bichloride of methylene has been employed for three years in the surgical clinic to the exclusion of ether and chloroform, being sent over from London by Messrs. Robin. Out of 108 operations performed under its influence, Dr. Rossi states that 52 patients slept

¹ *Lancet*, May 27th, 1872.

tranquilly, without any muscular agitation, within from 1 to 5 minutes; 32 experienced slight excitement, and became insensible in 8 or 10 minutes; 4 only were violently agitated, and sleep was not induced from 15 to 20 minutes; 20 remained completely free from its influence even after 50 minutes of inhalation. Vomiting occurred in 8 instances. No other accident declared itself, and the liquid excited no cough, but slight lachrymation. The pulse and respiration were increased in frequency from the first, but soon returned to the normal state, and even fell below it. The face underwent no change of color.¹ These results correspond in many particulars with those previously attained in England by Mr. Miall and Mr. Gaine, and this anæsthetic seems well worthy of future trial.

To the three *deaths* already recorded as happening under its use, must now be added another, from the Radcliffe Infirmary, Oxford. Bichloride of methylene was administered on a flannel bag to a woman, aged forty-four, who was about to undergo an operation for cancer of the breast. After two or three convulsive gasps, the patient died, though the quantity administered was small.

ART. 82 — *Lactic-Acid Theory of Acute Rheumatism.*

By BALTHAZAR W. FOSTER, M.D.

(*British Medical Journal*, December 23, 1871.)

Dr. Balthazar W. Foster relates two cases of diabetes, for the cure of which lactic acid was given, and in both the medicine caused an attack of acute rheumatism.

Dr. Foster remarks: "The above record contains an account of the joint-symptoms which were observed in two cases to follow the administration of lactic acid. In the first case, at least six well-marked arthritic attacks occurred; in the second case, under conditions less favorable for observation as to duration of treatment and place, one well-marked attack occurred. The phenomena corresponded in all respects to those which are characteristic of acute articular rheumatism. They came on when the acid was taken, and ceased when it was discontinued. When moderate quantities of the acid were tolerated, an increase in the dose was succeeded by the painful inflammation of the joints. Coinciding with the development of the articular affection was the appearance of perspiration, at first only slight, but afterwards, in the more severe attacks, copious and acid.

"These facts have dispelled the last lingering doubt in my mind as to the truth of the lactic-acid theory of rheumatism. At first I doubted the connection between the administration of the acid and the production of the rheumatic phenomena. In my scepticism, I regarded it as an accidental combination. The recurrence of the joint-symptoms, however, on March 13th, following distinctly on the repetition of the lactic-acid mixture, shook my disbelief. The coincidence of joint-attacks with the use of the drug might occur once, and, I thought, even a second time; but when I found it occur over and over again, there was no room for the hypothesis of coincidence. To refer Wright's attacks to a series of accidental combinations, requires, in my opinion, a much livelier faith than to accept the lactic-acid theory of acute rheumatism. If, to some, Wright's case presents not evidence enough in the beautiful typical character of the artificially-produced disease, and in the precision with which it could be manufactured at the will of the experimenter, then the second case comes in to refute any explanation founded on the assumption of an idiosyncrasy on the part of one patient.

"In health, no doubt, much larger quantities of lactic acid than any given in my cases, would be excreted without producing any perceptible disturbance in the bodily functions. The acid would escape by the skin, the kidneys, or, after oxidization, as carbonic acid and water. It cannot be justly argued that the

¹ *Journ. de Pharm. et de Chim.*, September.

quantities of acid taken by my patients were too small not to have escaped in this way. The conditions under which the drug was given must be borne in mind. In diabetes we have a state of suboxidization very unfavorable to the conversion by oxidation of new compounds; and in Wright's case this was aggravated by the serious pulmonary complications. Associated with these, there was a dry and branny state of the skin, highly unfavorable to the elimination of the lactic acid by one of the common channels. Lastly, the well-known persistent acidity of the urine in diabetes points to a pre-existing hyper-acidity of the fluids. These considerations are, I think, important, as defining the conditions under which the experiments were made—conditions most favorable to the development of the specific effects of the lactic acid. It was the combination of all these which rendered Wright so susceptible to the action of the drug. By the absence of one of them (the lung-complication), and the minor degree of glycosuria, we may probably explain the slighter susceptibility in the second case. The larger doses of acid which Wright was able to take occasionally, towards the close of his stay in the hospital, find an explanation partly in his more careful management of the remedy, partly in an acquired toleration of it, and partly in the great improvement which occurred under treatment in the state of the respiratory organs and in the sugar-excretions. . . .

"In this communication, my object has been to lay before the profession facts which have an important bearing on the origin of a common and serious malady. If, by pointing out the nature of the poison of acute rheumatism, they help in the smallest degree to improve therapeutics, they will not have been observed in vain."

ART. 83.—On the Use of Pepsine Wine in the Artificial Feeding of Infants.

By W. JACKSON CUMMINS, M.D.

(*Dublin Journal of Medical Science*, February.)

Dr. W. Jackson Cummins made an interesting communication on this subject to the Cork Pathological and Medico-Chirurgical Society. "The value of pepsine," he remarked, "in those forms of dyspepsia attended by a deficient secretion of gastric juice, is so well known and generally understood, that it is unnecessary for me to trespass on the time of the Society by more than an allusion to them. In the diseases of children, however, and especially as a substitute for a wet-nurse, when a mother is unable or unwilling to suckle her own child, the benefit of this valuable aid to digestion is not, I believe, as generally known, although allusions to it are to be found in medical essays. . . .

"There is nothing of course like a good breast of milk for an infant, if it can be had; and in the 'good old times,' when the peasantry and small farmers lived on potatoes and milk, without stimulating their nerves with strong tea, nor their brains with penny-a-liner's novels, there was an ample field for the selection of a foster parent, but now even when the *rara avis*, a good nurse, is procured, she is so independent and knows her power so well, that any caprice must be humored, and she is always ready to throw up her situation or neglect her charge.

"A wet-nurse is, then, an admitted torment, and a balance struck between its advantage and disadvantage is generally against the former.

"Artificial feeding by bottle is a great improvement upon the old system of spoon-feeding, as the act of suckling stimulates the salivary glands and insures due insalivation, which is an important part of infantile digestion. With such an aid the stomach of most *human* infants is vigorous enough to fall into the way of digesting *cow's* milk, properly diluted, and mixed with sugar and cream to assimilate the proportion of its constituents to human milk—but besides the relative excess of caseine and albumen contained in *cow's* milk when compared with human, the coagulum of the latter is 'soft, flocculent, and not so

thoroughly separated from the other elements of the fluid as the firm, hard curd of cows' milk is from the whey in which it floats.'—(West.)

"And when we reflect that the digestive organs of the human infant are found to digest human milk, and the force of its gastric juice proportioned to the solution of its soft flocculent coagulum, we can understand why the solvent power of its gastric juice is sometimes unequal to redigesting the firm curd of cow's milk. When such is the case, acetous fermentation is quickly set up, offensive gases distend the stomach and taint the breath, vomiting and diarrhoea set in, and in process of time the little patient sinks into a miserable state of marasmus, and dies.

"The remedy for this state of things is simple, for although we cannot change the elementary composition of the milk we have to use, we can introduce into the infant's stomach a digestive power proportioned to the food it has to use—the organic principle of digestion taken from the stomach of the calf.

"It is now many years since I first applied this simple theory to practice in the case of one of my own children, who, when about three or four months old, was reduced to a condition of marasmus by vomiting and diarrhoea, due to imperfect digestion of cow's milk. I ordered him fifteen or twenty drops of pepsine wine, to be given immediately before or after each meal. Soon after commencing it he began to improve, and by degrees all bad symptoms vanished, and nutrition was quite restored. The pepsine was continued until he was nearly two years old, and he thrived at least as well as if he had been wet-nursed; other treatment of course preceded and accompanied the use of pepsine, but it was not until the latter was commenced that improvement took place.

"Shortly after, a child born in England, and bottle-fed, was brought over to this country when about six months old; he also was suffering from infantile dyspepsia, and was pining away in a listless, apathetic state, quite indifferent to surrounding objects, and appearing as if he would lapse into idiocy from mal-nutrition of the nervous centres.

"I immediately ordered him pepsine wine, which produced such beneficial effects that after it had been continued about twelve months, he had become a bright, intelligent, well-nourished child.

"Since then I have never recommended a wet-nurse, and have used pepsine wine largely in dispensary, hospital, and private practice, and have seen many apparently hopeless cases recover under its use."

ART. 84.—*Therapeutic Value of the Hypodermic Injection of Ergotine in Hæmoptysis.*

By CURRIE RITCHIE, M.D.

(*The Practitioner*, December 1871.)

Dr. Ritchie has recently employed this treatment in nine cases of hæmoptysis:—

CASE 1.—A. B., aged twenty-two, spat florid blood, in June last, after a long walk, in considerable quantity. From that time till September had more or less cough, with occasional streaks of blood in sputa; menstruation regular; was then seized, after dancing, with severe hæmoptysis, lasting from two A.M. till eleven A.M., when Dr. Ritchie found her anæmic, with a troublesome cough, and expectorating mouthfuls of blood. Five grains of ergotine dissolved in water were injected into the left arm, and perfect rest in bed enjoined. No expectoration of blood took place after the injection, and two months afterwards she was apparently in perfect health.

CASE 2.—W. S., aged thirty, had mitral regurgitation, with consolidation of apex of left lung. Dr. Ritchie found him, at two A.M. of 20th September laboring under profuse pulmonary hemorrhage, which had already lasted one hour. In Dr. Ritchie's presence he expectorated two ounces of florid blood. Five grains of ergotine dissolved in water were injected subcutaneously, the hemorrhage was at once arrested, and did not return.

CASE 3.—A man aged twenty-six, had purulent expectoration for more than two years, with occasional streaks of blood. On the 26th September came to Dr. Ritchie laboring under severe hæmoptysis, which had lasted for two days continuously, in spite of medical treatment; according to his own account, he had spat up several pints of blood. His face was blanched, and the mucous lining of his lips and cheeks very pale. Five grains of ergotine dissolved in water were injected subcutaneously; not a single bloody sputum followed the injection till the 28th, when a repetition of the injection was followed by a similar abrupt cessation of the hæmoptysis, which, however, recurred on the night of the 29th, probably owing to domestic inquietude from his wife insisting on carrying him off to Ireland.

CASE 4.—F. B., aged sixty-two, had suffered from slight hæmoptysis for several days. Five grains of ergotine in watery solution were injected. At the end of two days the hemorrhage continued as before; a repetition of the injection was followed by complete cessation of the hæmoptysis, only one or two small dark-brown coagula following the second injection.

CASE 5.—A. F., aged seventeen, had a cavity the size of an orange in the apex of her left lung when first seen, and shortly afterwards was attacked by severe hæmoptysis. Five grains of ergotine in watery solution were injected, and only one single bloody sputum followed the injection. No return of the hemorrhage had taken place a month after when last seen.

CASE 6.—J. C., aged twenty-two, spat blood in May last for two or three days, and again a fortnight later. She remained in fair health till 11th October, when hæmoptysis again occurred to the extent of "nearly a quart of bright red blood" before Dr. Ritchie saw her. Five grains of ergotine in watery solution were injected and no more blood was expectorated till the 15th, when, after a severe fit of coughing, a streak of blood was detected on three several occasions in the sputum. In this case the injection produced a good deal of pain and induration round the seat of puncture, lasting till the 19th October.

CASE 7.—K. M., aged nineteen, had slight hæmoptysis for several days; a few hours before being seen had spat up several mouthfuls of pure blood. Five grains of ergotine in watery solution were injected subcutaneously; only one bloody sputum followed, and a fortnight later there had been no return of the bleeding.

CASE 8.—J. W., aged twenty-eight, caught cold in March last, and continued to expectorate phlegm for two or three months; he then caught a fresh cold, and ever since his sputa has been streaked with blood. The sputa are tenacious, not frothy; expectorates most blood when at work, but feels easier there. Five grains of ergotine in watery solution injected on 1st November. Expectoration of blood took place once on 1st November, and once on the morning of the 21; but, in the afternoon of the 2d, it became considerably increased, and continued till the 6th. So much irritation had been produced by the injection, that Dr. Ritchie did not repeat it till the morning of the 7th, when three grains of ergotine were injected, dissolved in equal parts of glycerine and spirits of wine. There had been no return of the hæmoptysis, on the 14th, when last seen, and no trace of irritation from the second injection.

CASE 9.—Mrs D., aged sixty, under Dr. Bowman's care. On the 19th October had been spitting blood continuously for two days, except for about six hours, when there was almost complete cessation. At 8 P.M. on the 19th hæmoptysis recommenced, and she was ordered ten-minum doses of the liquor ergotæ every two hours, without effect. At 9 P.M. she was expectorating blood profusely, an incessant hacking cough compelling her to do so every few seconds. At Dr. Ritchie's suggestion, Dr. Bowman injected five grains of ergotine dissolved in water, after which there was absolutely no hæmoptysis, and when last seen, on the 26th October, she was apparently quite well.

ART. 85.—On the Therapeutic Actions and Uses of Turpentine.

By J. WARBURTON BEGBIE, M.D.

(*Edinburgh Medical Journal*, July, 1871.)

Dr. Warburton Begbie read a paper on this subject before the Medico-Chirurgical Society of Edinburgh. He gave a brief sketch of the ancient history of the drug from the time of Hippocrates, with a notice of the various forms in which the oleo-resins of the conifers are used or have been used in therapeutics. Oil of turpentine was described as being irritant and stimulant,

quicken the circulation and augment the temperature of the body. In larger doses it produces a sort of intoxication; in drachm doses it is hypnotic. Externally it is a valuable rubefacient, and is absorbed by the skin so as very soon to be recognized in the breath, and by its characteristic violaceous odor in the urine. The production of this violaceous odor in its perfection seems to be a test of the integrity of the urinary organs, as it is less marked or absent in disease of the kidneys. The therapeutic actions and use of turpentine are various:—

1. As a cathartic it is uncertain, but along with castor oil it is useful in cases of obstinate obstruction and tympanitis.

2. As an anthelmintic it is chiefly used as a cure for tapeworm; also in the form of enema it destroys ascarides and lumbrici.

3. Though turpentine sometimes causes hæmaturia, it cures certain passive hemorrhages. It is useful in purpura, probably acting through the nervous system; and is useful also in hæmoptysis, hæmaturia and uterine hemorrhages.

4. As a stimulant, it is especially valuable in adynamic fevers; as in the stupor of typhus, in certain kinds of delirium, and in the later stages of enteric fever with a dry tongue.

5. In certain nervous diseases such as epilepsy and chorea, it is said to be very useful; but in epilepsy it is supplanted by bromide of potassium, and in chorea by arsenic. In certain forms of sciatica and crural or brachial neuralgia in the aged, twenty-minim doses thrice daily have a very good effect. In the nervous headache of delicate females, and the headache which is induced by fatigue, it is a better stimulant even than strong tea, and without the effect which tea so often has of banishing sleep.

6. In all chronic discharges from mucous membranes, such as chronic and fetid bronchitis, it is very useful, and even is advantageous in gangrene of the lung in checking the fetor. Under this head some interesting cases were given of gangrene of lung depending on the presence of foreign bodies.

ART. 86.—On the Action of *Digitalis* and *Digitaline* upon the Respiration and Temperature.¹

By M. GOURVAT.

(*Gazette Médicale de Paris*, No. 50, 1871.)

"Action upon the Respiration.—The modifications undergone by the respiration represent two different types according to the dose of digitaline. M.M. Bouley and Raynal and others have observed retardation of the respiratory movements after the administration of small doses, acceleration and intermittence followed at a late period by retardation after poisonous doses.

"M. Legros observed in infants attacked by pneumonia or pleuro-pneumonia that the inspirations fell from 42 and 32 to 24 in the course of four days under the influence of therapeutical doses of digitaline. M. Dubuc, in a case of poisoning by digitaline, noted that the respiratory movements were 68 in the minute.

"I have very often noticed in dogs, rabbits, and frogs, a kind of periodicity in three periods, in the respiratory movements. A short time after the injection the inspirations become frequent, jerky, and convulsive. To this excessive frequency succeeds a rapid fall; three or four slow and more extended inspirations constitute the second stage; the third stage is represented by an intermittence.

"Some of my tracings show that after a small dose of digitaline the respiratory movements are reduced, and that after a large dose they are more frequent than in the normal condition.

"There is a remarkable parallelism between the modifications impressed upon the circulation and the respiration by digitalis and digitaline.

¹ Communicated to the Société de Thérapeutique.

"Do these substances act alike and simultaneously on these two functions, or do they influence one rather than the other? After considering the special and primary action which they exert on the heart and arterial vessels, I think that the calm or the disturbance which they produce in the circulation involves as a consequence the calm or disturbance in the respiration, and that the latter is attacked but consecutively.

"*Action upon the Temperature.*—The therapeutical employment of digitalis in inflammatory affections has placed beyond doubt a fall of the temperature parallel to the lowering of the pulse, which, according to M. Hertz, always precedes it by a few hours. Clinical thermometry allows us to follow closely the course of the deservescence of heat, and it may generally be found that in the course of three or four days after commencing with moderate doses of digitalis the animal temperature falls from 43° or 41° C., its maximum in typhoid, to about 36°.

"MM. Bouley and Reynal have likewise observed this slow and progressive sinking of temperature under the influence of small doses of digitalis, and have seen an elevation by some degrees after the administration of strong or poisonous doses. I have also observed the same in the rabbit, whose temperature in the ear is raised by five or six degrees soon after the injection of one centigramme of digitaline. But this exaggerated calorification is always followed by a fall of temperature, and MM. Bouley and Reynal have observed it to reach the extreme limits of thirty-two and even twenty-five degrees in the last moments of the agony.

"The depression of temperature may be very well explained by the lowering of the pulse, the retardation of the peripheral circulation, and the diminution of the number of respiratory movements under the influence of small doses, whilst with large doses the increased peripheral circulation induces during an early stage an elevation of temperature."

ART. 87.—*The Physiological Action of Digitalis on the Depressor Centres of Reflex Action of the Frog, along with Experiments on the Influence of the Circulation on this Organ.*

By A. WEIL, M.D.

(*Reichert und Dubois-Reymond's Archiv*, 1871; and *Glasgow Medical Journal*, February.)

Certain phenomena have for some time been taken to indicate that in the brain there exist centres which exercise a depressing influence on reflex action. These phenomena are the increase of reflex action in beheaded animals, and also the power which we possess of voluntarily preventing reflex action. With a view to find the seat of these depressor centres, Setschenow conducted certain experiments, the result of which was to show that they are situated in the optic lobes and corpora quadrigemina. The present paper has reference to the action of digitalis on these centres, and also the influence which various changes in the circulation produced on them. The experiments are very elaborate, and are marked by great ingenuity, and the general results deduced may be stated as follows: digitalis reduces the power of reflex action in frogs which had been specially prepared to exhibit reflex action—the degree of this action being tested by the number of seconds during which the leg of such a frog was retained in an acid solution. A similar reduction of the power of reflex action is produced by depriving the animal of blood, also by stopping the heart's action, and to a less degree by retardation of the heart's action. It was also produced by cutting out the lungs, by placing the animal for some time in an atmosphere of hydrogen, or by poisoning with H₂S. In these two classes of experiments the depression of reflex action is probably due to the absence of O in the blood, the depression centres being irritated by blood deprived of oxygen. The question then comes, whether the depressing action of digitalis is due to the action of this substance on the circulation, the diminution of the heart's action being the actual cause of the reduction of the reflex

action. The experiments conducted with this view seem to show that while the depression is partly due to this latter cause, yet that digitalis has also a direct action on the depressor centres, this being shown by the fact that the depression is much greater than is produced by an equivalent simple diminution of the heart's action, and also that the depression sometimes precedes the retardation of the heart's action. While digitalis acts on the depressor centres, it appears also, after a certain time, to act directly on the reflex centres on the spinal cord. When small doses had been given, and a short time had elapsed, reflex action was recovered, on the removal of the depressor centres by decapitation of the frog, but with larger doses, and after a longer time, recovery did not take place, so that the digitalis had acted on the spinal cord.

ART. 88.—*Crystallized Digitaline.*

By M. BUIGNET.

(*British Medical Journal*, December 23, 1871.)

M. Buignet, in a report to the French Academy of Medicine, made January 23, on the essays sent for competition for the Orfila Prize, announces that the successful candidate (whose name is withheld until the time for the official declaration arrives) has made a discovery likely to be of very great utility in therapeutics and physiology. It is the production of a crystallized "digitaline" in a state of absolute purity. The product has been submitted to a rigorous examination by the Prize Committee, and the superiority of the procedure adopted for the isolation of this active principle is admitted without hesitation. Splendid crystals, resembling those of sulphate of quinia, and furnishing a bright emerald green when treated by hydrochloric acid, were exhibited at the last meeting of the Academy, and greatly admired. The chemical perfection of the product has been confirmed by its physiological and therapeutical effects in the hands of MM. Vulpian and Marrotte. Its promptitude and intensity of action are far greater than is the case with the digitaline of Homolle and Quévenne—three milligrammes administered in twenty-four hours producing saturation and intolerance, and one milligramme daily being ill-supported by most patients, so that more than half this quantity cannot usually be given. It is evidently an agent of tremendous power, which will require great caution in its employment, and may prove a fearful weapon in the hands of the poisoner.

ART. 89.—*On the Employment of Nux. Vomica and the Salts of Strychnine in the Treatment of Obstinate Vomiting.*

By Dr. DEBANGE.

(*Lyon Médical*, January 7, 1872; *Gazette Hebdomadaire*, No. 6, 1872.)

The author of this communication, relying upon the experiments of Magendie and Marshall Hall, which established the action of nux vomica upon the pneumogastric nerves, has tried strychnine in the treatment of asthma and emphysema with much success. These results have led Dr. Delange to employ the same medicinal agents in certain affections of the stomach, and especially in obstinate vomiting. He reports the case of a young woman, aged twenty years, who suffered from various nervous symptoms, among which figured obstinate vomiting occurring after various hæmatemeses. This vomiting lasted for several days; blisters dressed with morphia had no effect. At last sulphate of strychnia, in doses of two milligrammes, was administered hypodermically. The success was immediate, and in the course of two days the vomiting was arrested. The administration of the strychnia was continued in the same doses for four days, and the cure was permanent.

ART. 90.—*On the Therapeutical Use of the Lacto-Phosphate of Lime.*

By B. W. MCCREADY, M.D.

(New York Medical Journal, June, 1871.)

There is reason to believe that phosphate of lime besides entering into the composition of bone, has some influence in cell formation, and, according to Lehmann, it is found in appreciable quantity wherever cells or fibres are formed. The phosphate has been recommended in cases of rickets, and the experiments of Milne-Edwards seem to show that under its use fractured bones in dogs and rabbits produce more abundant callus. But in a recent series of articles, published in the *Archives Générales de Médecine*, Dr. L. Dusart examines the whole subject, and attributing the somewhat unsatisfactory results hitherto obtained to the great insolubility of the ordinary phosphate, he recommends the use of a new preparation, which he calls the lacto-phosphate of lime, in which the lime-salt is dissolved in free lactic acid. Dr. Dusart made experiments both on the lower animals and on man, and he found that the union of bone, in cases of fracture, was promoted by the use of this preparation, which was also useful in rickets and some other diseases, as diarrhœa and indigestion. In the United States, at Dr. McCready's request, a syrup of the lacto-phosphate of lime was prepared by the pharmacentists, and he found the drug useful in cases of defective nutrition, especially in the cases of prematurely-weaned children, in rachitis, and in atonic dyspepsia. Dr. W. A. Hammond found it of very great value in cases of nervous derangement. In forming the syrup of the lacto-phosphate, bone-earth is dissolved in hydrochloric acid, then precipitated by ammonia, and the recent precipitate is treated with concentrated lactic acid; the clear solution is then mixed with syrup, and flavored with orange-flower water.

ART. 91.—*On Ergotine Injections for Varicose Veins.*

By Dr. VOGT.

(Medical Times and Gazette, May 11.)

Dr. Paul Vogt, Assistant-Surgeon in the Out-Patient Clinic at Griefswald, encouraged by the benefit which Langenbeck and others have derived from treating small aneurisms by hypodermic injection of the solution of ergotine, determined upon trying it in varicose veins of the lower extremity. Hitherto, as the various attempts at obtaining a radical cure of this affection by producing obliteration of the veins over a certain extent have led to evils and dangers out of proportion to the affection itself, he has confined himself to palliative treatment. He refers (*Berlin. kl. Woch.*, March 4) to a case in which an extensive varix, which had occupied the leg for years, yielded in the course of a week to two ergot injections (ext. sec. cornut. two parts, to sp. vini and glycerine of each seven parts), this being replaced by a hard, circumscribed infiltration, which eventually subsided. In various other cases as remarkable results have followed.

In explanation of the action of the ergot, Dr. Vogt believes that the following points are worthy of consideration: 1. From clinical and experimental observation the ergot injection produces contraction of the muscular coats of the vessels—chiefly of the arteries. Through the contraction of the calibre of the arteries thus produced (especially operative on those of medium calibre which are rich in smooth muscular fibre), less blood is carried into the veins, this lesser quantity being propelled with greater velocity. 2. The ergot also acts upon the muscular coat of the veins; for although this, after years of persistent dilatation, may have disappeared in many places, yet in others it is always still present. When, indeed, the varices have not been of prolonged duration, that a considerable elasticity of the walls of the veins persists is shown in puerperal women, who often, prior to delivery, have varicose veins as

thick as the finger, which only a few days after that event entirely subside. 3. It is possible that some effect may be exerted by the direct compression produced on the varix by the infiltration-swelling which results.

Whether the favorable results which in all these cases have been so striking will prove definitive cannot be decided, as sufficient time has not elapsed to allow of the cure being regarded as radical. At all events, so simple and harmless a method is well worthy of further trials; and Dr. Vogt has derived good results from its employment in other forms of phlebectasis, in varicocele, hæmorrhoids, and certain forms of angioma.

ART. 92.—*On Ergot of Rye.*

By JOHN DENHAM, M.D., F.R.C.S.I.

(*British Medical Journal*, May 18.)

At a meeting of the Dublin Obstetrical Society on March 16th, Dr. Denham read a paper, in which he maintained that ergot did not act as a poison on the fœtus. Physiological experiments on animals were in favor of the view that ergot was at all events not a powerful or violent poison. Again, statistics of mortality of the children in tedious and difficult labors, before the use of ergot came into fashion, agreed remarkably with those of later times of deaths when the drug was employed. Dr. Denham had come to the conclusion that, when ergot was administered between the sixth and ninth months, the life neither of mother or child was affected, and that labor was not induced by it until the full period of utero-gestation was completed. In cases of apprehended post-partum hemorrhage, ergot—as suggested by Dr. Beatty—might be given towards the end of the second stage of labor with the happiest results. Again, when abortion had already commenced, ergot acted very beneficially. Dr. Denham concluded by drawing attention to the varied uses to which the drug in question had lately been applied.—Dr. Geo. Johnston believed that ergot did not produce a poisonous effect on either mother or child. Delivery by the forceps had largely taken the place of the use of ergot in labor.—Dr. Ringland fully agreed with Dr. Denham's views as to the non-poisonous character of ergot. He regarded it as a valuable styptic, but would not depend upon it alone as such. He used it with advantage in the third stage of labor in some cases. His experience did not bear out Dr. Denham's remarks as to its merely styptic action in the later months of pregnancy, for labor had often resulted in such cases.—Dr. Arthur Ringland had recently injected four grains of ergotine, uterine-action following in four and a half minutes. Nausea and vomiting ensued.—Dr. Atthill said sores were apt to form after the operation of hypodermic injection.—Dr. Byrne thought the action of ergot might be dangerous to the child, not from any toxic effect but from mechanical causes, by inducing pressure on the funis. He quoted a case in point, where the second of twins was born livid after the use of ergot, as if it had suffered from pressure. In inertia during the second stage, and in threatened hemorrhage during the third stage, ergot had been of use in his experience.

ART. 93.—*Guarana a Remedy for Sick Headache.*

By SAMUEL WILKS, M.D., F.R.C.P., Physician to Guy's Hospital.

(*British Medical Journal*, April 20.)

Dr. Wilks draws the attention of the profession to guarana as a remedy for sick headache, and at the same time asks for the experience of those who may already have some experience with the drug. Having had it recommended by Mr. Helmcken, of British Columbia, and Dr. Wood, of Montreal, Dr. Wilks determined to try the remedy in a systematic manner, and requested his neighbor, Mr. Hooper, the chemist, to procure him a packet of the powders. These Dr. Wilks has recommended to several patients and friends, and the result is so

encouraging, that he has hastened to suggest their trial to his professional brethren. One lady speaks most enthusiastically of their power, as she has now, on two separate occasions, had her headache arrested by their use. The drug has long been known, for mention is made of it in English and French pharmacologies, but appears never to have come into general use. It consists of the seeds of a tree growing in Brazil, called *Paullinia sorbilis*; and these, according to Johnstone, in his "Chemistry of Common Life," are used as we use cocoa. The seeds are ground into powder, and contain an alkaloid which is said to be identical with that found in tea and coffee. The medicine is manufactured by Grimault and Co., No. 7, Rue de la Feuillade, Paris.

ART. 94.—*On Guarana against Sick Headache.*

By A. SAMELSON, M.D.

(*British Medical Journal*, May 11.)

Induced by the favorable testimony of Grisolle,¹ Dr. Samelson prescribed the *pulvis paulliniæ sorbilis* in 1859, for a friend, who had for many years been the subject of severe hemicrania, apparently inherited from his father. The drug was obtained from one of the foremost druggists of Paris. In all, half an ounce of the powder was taken, divided in doses varying from ten to twenty grains. It proved almost entirely inefficacious. However, Grisolle himself declares the medicament only as "frequently but not always" useful. Bouchardat, in the fifth edition of his "Formulaire," published in 1854, ranks it with the astringents, and only refers to its use in dyspepsia, chronic diarrhœa, and dysentery.

ART. 95.—*On the Use of Cold Water as an Oxytocic.*

By DR. GARVIN, of Kentucky.

(*American Journal of the Medical Sciences*, October, 1871.)

The efficacy of cold water in exciting contraction of the uterus in post partum hemorrhage has induced Dr. Garvin to employ the same agent in promoting the action of the organ in cases of tedious labor. He gives the history of four cases selected from a number of others successfully treated by this agent. In all the cases the uterus was inactive, and presented the conditions in which ergot of rye or the use of forceps is usually recommended, but they all did well, by the application of iced water to the abdomen. Dr. Garvin compares the value of cold water with that of ergot; and while thinking that the latter drug has been overestimated, he believes that only experience is needed to prove the efficacy of cold water, by the use of which, moreover, none of the dangers are encountered which often attend the use of ergot. Dr. Garvin argues that cold water, when applied to the surface of the body, though locally depressing, acts as a stimulant to the whole system, as is shown by its effects in restoration from syncope, and in its stimulating influence on the brain, in cases of narcotic poisoning. It does not exert a toxic power on the nervous system as ergot does, but it merely awakens and revives the dormant and flagging energies, and re-establishes a normal condition. The only objection which can be urged against the use of cold water, as an oxytocic, is the liability of the patients to take cold under its use, but this inconvenience may be obviated by a few simple precautions. When applied to the surface in the manner recommended, cold water excites the uterus to contraction by reflex action.

¹ "Pathologie Interne," 5th edition, 1852, vol. ii. p. 581.

ART. 96.—*Eucalyptus Globulus* in Intermittent Fever.

(British Medical Journal, May 11.)

About two years ago, Dr. Lorinser, of Vienna, laid before the profession the results of his observations on the treatment of ague by the *Eucalyptus Globulus*.¹ A supply of the tincture was placed, for the purpose of observation, at the disposal of medical men connected with the railway stations in localities where ague was frequent. The quantity, however, was but small; and a larger supply was distributed in May of last year. The results obtained during the summer have been collected and summarized by Dr. Joseph Keller, chief physician of the Austrian railway company.

The number of patients treated with tincture of eucalyptus was 432. Of these, 310 (71.76 per cent.) were perfectly cured; and 122 (28.24) required to be afterwards treated with quinine. Of the 310 patients who were cured, no paroxysm occurred after the first dose in 202; in the remaining 108, there were one or more subsequent paroxysms, which, however, yielded to repeated doses of the medicine. Quinine had been given without result in 118 of the 432 cases; 293 of the patients had had ague in previous years, and 139 were attacked for the first time in 1871. Of the 122 cases in which the eucalyptus failed, 58 recovered under the use of quinine, 38 were not cured, 10 were sent home, and 16 remained under treatment. Of the 118 cases in which quinine had been given unsuccessfully, 91 recovered under the use of eucalyptus, and in 27 no result followed.

The several types of intermittent fever were represented as follows: quotidian, complicated, 117, simple 73=190; tertian, complicated, 126, simple 95=221; quartan, complicated, 16, simple 4=20; quintan, complicated, 1. The complications were, enlargement of the spleen or liver, anæmia or chronic gastric catarrh, paludal cachexia, &c. The remedy was successful in 161 of the 260 complicated cases, or 61.9 per cent.; and in 149 (or 86.6 per cent.) of the 172 simple cases. The percentages of success in the several types were: in tertian, 75.57; in quartan, 70; in quotidian, 67.89. Among the cases in which the first dose of eucalyptus arrested the disease, were 95 complicated and 107 simple; 28 of the former and 20 of the latter had previously been treated unsuccessfully with quinine. In the cases where the paroxysms recurred, there were 70 complicated and 38 simple; quinine had been given without success in 27 of the former and in 15 of the latter.

Of the 432 patients, 353 were men, 46 women, and 33 children. There were 155 patients who were immigrants into the localities; and in these the disease was more frequently attended with complications, and the treatment was less successful, than among the indigenous inhabitants.

The treatment was generally commenced on the fifth day after the first paroxysm of ague; its duration averaged nine and a half days, that with quinine in previous years having been twelve and a half days.

The tincture was made by dividing into small pieces the leaves of eucalyptus obtained through France from the native country of the plant, and macerating in alcohol for three months. Ten pounds of leaves yielded twenty-five quarts of the tincture. The average dose was two drachms; and the average quantity used for each patient was seven drachms—this, however varied much, according to the nature of the case and its complications.

Dr. Keller concludes that eucalyptus must be regarded as a very important remedy for ague; but that the plant as cultivated in Austria is less efficacious than that imported from its native soil; that the remedy is of service especially in obstinate cases of ague where quinine has been given unsuccessfully; and that the average duration of treatment by eucalyptus is shorter than that by quinine. He believes that the tincture is the most eligible preparation of the plant, as the essential oil is retained. The cost of a quart of the tincture he

¹ See *British Medical Journal*, May 21, 1870.

calculates to be less than two florins. It has a pleasant aromatic flavor. For women and children, some simple or orange syrup may be added. In the milder cases, two or three teaspoonfuls, taken before the expected paroxysm, are generally sufficient. Where cachexia is present, small doses should be taken night and morning for some time.

ART. 97.—*Eucalyptus Globulus.*

(*The Lancet*, April 20.)

Several inquiries having been made regarding the properties of a new drug obtained from the *Eucalyptus Globulus*, or Blue Gum-tree, the following information may prove interesting to our readers. The eucalyptus is a myrtaceous tree, a native of Australia, but recently cultivated in Corsica and South Europe. On account of its supposed efficacy in marsh and other fevers it has already gained the name of "Fever Tree" in Spain. Dr. Lorinser, of Vienna, reports that he employed it in the treatment of intermittent fever with success. Professor Gubler has also strongly recommended this remedy in the *Bulletin de Thérapeutique* as a tonic and stimulant. It has also been used in bronchitis, and as an antiseptic application to wounds.

The eucalyptus has been subjected to extensive trial in Corsica by Dr. Carlotti, and his very favorable report has been translated into English. From this report we learn that the whole of this giant tree is strongly impregnated with febrifugal properties. He has used leaves, bark, and wood with success.

Professor Maclean, of Netley, has also furnished us with his experience of this drug in the October number of *The Practitioner*. Cigars made from the leaves of this plant have been employed in cases where the use of antispasmodic remedies has been indicated, and Dr. Maclean says, as the result of his experience at Netley, that he knows of no remedy, with the exception perhaps of the subcutaneous injection of morphia, so efficacious in allaying pain, calming irritation, and procuring sleep, in cases of chest aneurism involving pressure on the vagus or its branches, and in cardiac asthma, as the eucalyptus globulus. A tincture of the leaf has been used in two-drachm doses with success in Germany, in the treatment of intermittent fever.

By a recommendation from the Minister of the Interior the eucalyptus was subjected to analysis by Professors Vauquelin and Lecliana. They obtained, besides an essential oil containing eucalyptol or eucalypt-camphor, an extract resembling resin of cinchona. This extract yielded a substance capable of neutralizing the strong acids, and forming crystalline salts. The sulphate crystallized in stars, like the quinine salt; this induced them to try the action of chlorine and ammonia on this substance, and the green coloration of quinine was instantly produced. It would be curious if quinine should be found in other trees than cinchonas. The oil has a lemon-yellow color, but in other respects it strongly resembles cajeput oil. As its alkaloid and therapeutic uses resemble cinchona it has been given in similar doses.

The preparations made by Messrs. Savory and Moore are tincture, distilled water, solid extract, and fluid extract. The tincture contains its alkaloid, camphoraceous oil, etc. The distilled water is an agreeable vehicle for stimulants. The solid extract is for pills, and the fluid extract for mixtures, etc. They are all efficient modes of exhibiting the remedy. The dose of the tincture and fluid extract is a teaspoonful in water two or three times a day. The powder is given in the same doses as cinchona powder.

ART. 98.—*Camphor with Bromine as a Sedative.*

By Professor DENEFFE.

(*Presse Médicale Belge*, November 19; and *Medical Times and Gazette*, December 2.)

Professor Deneffe, of Ghent, states that for more than two years he employed a combination of camphor and bromine, which he thinks is entitled to general

attention. The celebrated chemist Laurent showed that bromine will easily unite with camphor at the ordinary temperature, but that the product is slowly decomposed by exposure to the air. M. Swartz, Professor of Chemistry at Ghent, has shown that this body heated in a closed vessel is resolved into hydrobromic acid and a crystallized compound which is monobromized camphor (*camphor monobromé*), a body differing only from ordinary camphor by the substitution of an atom of bromine for an atom of hydrogen. It is a perfectly crystallized substance, fusible at 76° C., and boiling at 274° . At Professor Swartz's request, M. Deneffe has investigated the therapeutical properties of this body, and has found it to be an excellent sedative for the nervous system. He intends shortly to publish his cases in proof of this, and, in the present communication, furnishes one of these, in which excitement of the nervous system passing into true delirium tremens was effectually relieved. He prescribed it in the form of pills, seventy grains being made into thirty pills, of which one was given every hour until twenty had been taken. For three days longer from forty-five to sixty grains were given in the twenty-four hours, the quantity being diminished from forty-five to thirty grains daily for a week longer. The recovery was progressive and stable.

ART. 99.—*Application of Iodine for Arresting the Spread of Hospital Gangrene.*

By JON. G. MILLER, M.D.

(*American Journal of the Medical Sciences*, October, 1871.)

Dr. Miller considers iodine to be one of the best, if not the very best, remedy for hospital gangrene, and this belief is founded on the following experience: "After the battle of Atlanta, in July, 1864, I had charge of the seventeenth army corps field hospital, in which there were over one thousand wounded. The railroad being often destroyed in our rear, we were frequently for quite a number of days without the proper nourishment for the wounded. The consequence was, we had a great many cases of hospital gangrene. It was impossible to procure bromine, and we substituted for it iodine. The following is the manner in which we used it: We took the ordinary compound tincture of iodine, and put into it as much iodine as it would dissolve, and applied it freely two or three times a day, with satisfactory results in every case."

ART. 100.—*On the Clinical Significance of the Presence of Leucin and Tyrosin.*

By JAMES TYSON, M.D.

(*American Journal of the Medical Sciences*, January.)

Dr. James Tyson, in a paper on the clinical characteristics and physiological and pathological relations of leucin and tyrosin, after noticing the various solids and fluids of the body in which leucin is a normal or pathological constituent, observes that it is in certain affections of the liver attended by impaired function of this organ, as in acute yellow atrophy or chronic softening, that the presence of leucin assumes a clinical significance, being found under these circumstances in the blood and secretions, particularly in the urine, as well as in the substance of the liver, kidney, and spleen. Its abundant presence in the liver, under these circumstances, leads us to suppose that this organ is the seat of its destruction, rather than its formation, as some suppose; and the fact that it only, or chiefly, appears when the function of the liver is deficiently carried out, makes this supposition reasonable; while its elimination at such times by the kidney, analogous to and coincident with the supplemental action of this organ in separating the constituents of bile, affords confirmation of the same view. The author has found leucin abundantly in the urine of a case of atrophic disease of the liver, which continued almost a year

before it terminated fatally. Beale has found it in the urine in cases of chronic wasting of the liver with jaundice; but Städeler has found it in the urine in typhus and smallpox, where deficient action of the liver is not characteristic, although the action of that organ may have been deranged. Coincident with the presence of leucin and tyrosin in the urine is a great diminution in the urea. With regard to the presence of tyrosin in hepatic affections, the author quotes the observations of Neubauer and Frerichs as to its abundant presence with leucin in the urine of acute yellow atrophy of the liver. Hoppe-Seyler, however, says that it is only in certain cases of softening of the liver that it, with leucin, is abundantly present in the urine; and that, in the ordinary cases of so-called yellow atrophy, neither tyrosin nor leucin is met with in the urine. Hoppe-Seyler denies that it is found in the urine of severe typhus and variola. The author states that in two cases of destructive disease of the liver which have been under his observation, one of which, at least, was a case of true acute yellow atrophy, and both of which afforded ample opportunity for the study of leucin, he was quite unable to find any evidence of the presence of tyrosin. His experience has been confirmed by that of two other observers. He concludes that leucin and tyrosin have only a marked significance when present in the urine, in connection with symptoms of deranged hepatic function. They are then of grave import, as indicating destructive diseases of the liver, which have, as far as is known, always terminated fatally. The mode of death, with coma or convulsions, together with the deficiency of urea in the urine containing leucin and tyrosin, points to a condition analogous to or identical with uræmic poisoning.

ART. 101.—*A Fever Mixture.*

By HORATIO C. WOOD, Jun., M.D., Physician to the Philadelphia Hospital.

(*New Remedies; A Quarterly Retrospect of Therapeutics, etc.*)

The value of aconite in allaying fevers is apparently not so completely recognized as it should be; and having found the following formulas very beneficial in allaying fever, and in controlling it when not dependent upon a deep-seated cause, Professor Horatio C. Wood, jun., M.D., Philadelphia, editor of *New Remedies*, publishes the following: Take of tincture of aconite root, gtt. xxiv; sweet spirits of nitre, ℥ij; solution (or mixture) of citrate of potash, ℥iv. Mix. S. Tablespoonful every one, two, or three hours. This formula, containing two drops of the tincture of aconite root to the dose, should be given cautiously, and every hour only in urgent cases which can be carefully watched. Many women will scarcely bear it given every two hours. The following combination is more generally applicable and safer: Take of tincture of aconite root, gtt. xij; sweet spirits of nitre, ℥ij; solution (or mixture) of citrate of potash, ℥iij. Mix. S. Tablespoonful every one or two hours.

Where there is much restlessness with the fever the following formula is recommended: Take of tincture of aconite root, gtt. xij; sweet spirit of nitre, comp. spirit of nitre, ℥ss; camphor water, ℥iij; morphia sulph., gr. ss. Mix. S. Tablespoonful every one or two hours.

ART. 102.—*Suggestions as to the Use of Calabar Bean in Cholera Asiatica.*

By W. MUNRO, M.D., C.M., District Medical Officer, St. Kitts, W. I.

(*Edinburgh Medical Journal*, October).

Whether the cholera poison kills by acting directly on the blood, or on the vaso-motor centres of the spinal cord through the blood, causing contraction of the small arteries and capillaries of the skin and congestion of the internal organs, there can be but little doubt, Dr. Munro thinks, unless in the minds of those whose great specific is castor oil, that whatever counteracts the effects produced

by the poison will be useful; and this, the author thinks, considering its physiological action, Calabar bean is likely to do. In Cholera Asiatica the temperature of the surface of the body is diminished, while that of the rectum, and probably that of the viscera, is elevated,¹ the capillaries in the first case being contracted, in the other dilated, probably from some irritation of the vasomotor centres of the spinal cord. The action of Calabar bean is to cause dilatation of the smaller arteries and capillaries, and this Dr. Fraser "is led to believe, is mainly due to a specific effect on the ganglia and nerves which govern the calibre change in the vascular system;"² and "it causes paralysis of the spinal cord by a special and primary action."³ At first, no doubt, there is for a short time contraction of the vessels, but this is probably caused by the restriction in the heart's action.

"The Calabar bean, acting on the bodies of mammalia in a state of health, expands the capillaries and slightly elevates the temperature of both skin and rectum;"⁴ and it might be advanced that the benefit conferred by its causing dilatation of the peripheral vessels in cholera would be counterbalanced by its effect on those of the intestine. As, however, the dilatation of the vessels in the intestinal mucous membrane seems to be rather the effect of the contraction of those of the skin than a primary effect of the poison, it is highly probable that if the bean restored the former to their natural calibre, as it probably would, the latter remaining to a certain extent in a state of dilatation, if they did so, would be of no consequence, as they would no longer be in a state of congestion, and would be better able to retain the serum of the blood, the loss of which is so serious.

Physostigma increases the secretions,⁵ probably as an effect of the dilatation of the vessels. If the ideas given above are correct, however, it would not have this effect on the abdominal secretions in cholera.

"It seems in the first place to increase the vermicular contractions of all the abdominal viscera, and then diminish them."⁶ This action would probably tend to lessen the purging and vomiting.

That it can act as a counter-poison to poison having so far an action analogous to cholera, is shown by its causing dilatation of the minute bloodvessels when they have been contracted by atropia.⁷ Dr. Fraser has found that it is an antidote to strychnine,⁸ and it has been used with success in tetanus.⁹ It would therefore, it is more than probable, even were it useful in no other way, relieve, perhaps even remove the frightful cramps of cholera, the pain of which, by its depressing influence on the system, assists so materially in destroying the patient.

As to *when* the bean ought to be used: This, Dr. Munro thinks, could be best judged of by the medical man, according to circumstances; but, as far as he thinks at present, he would be inclined to use it whenever it was found that the premonitory diarrhœa was not stopped by ordinary remedies, and that the external temperature was lower than normal by the thermometer.

As to *how* to use it: Dr. Munro would give it by subcutaneous injection. In Dr. Macarthur's case mentioned above, it was so given, and no bad results followed; but even were some local inflammation to be set up, if the patient recovered through its use, that would not much matter. Dr. Munro would inject in the dorsal region of the back, beginning with $\frac{1}{2}$ gr. of the extract, repeated every two hours, and increase the dose if required. The author would by no means trust to Calabar bean alone, but would use such rational means (as, injections of salt and water, sinapisms, and heat applied externally) as have been found of benefit.

¹ See Niemeyer's "Text-Book of Practical Medicine," translation by Humphrey and Hackley, vol. ii. pp. 640, 641.

² Vide Fraser, in *Transactions of the Royal Society*, vol. xxiv. p. 53.

³ *Ibid.*, p. 20; and see also Fraser in *Edinburgh Medical Journal* for June and December, 1867.

⁴ *Ibid.*, p. 54.

⁵ Vide Fraser, in *Transactions of the Royal Society*, vol. xxiv. p. 73.

⁶ *Ibid.*, p. 57.

⁷ *Ibid.*, p. 67.

⁸ Page 26, Exp. xliii.

⁹ See, for instance, Dr. Macarthur, in *Edinburgh Medical Journal*, May, 1867.

ART. 103.—*On some of the most Important Remedies used in Brain Disease.*

By WILLIAM HAMMOND, M.D., Professor of Diseases of the Mind and Nervous System in the Bellevue Hospital Medical College, New York.

("A Treatise on Diseases of the Nervous System," 1871. 8vo. pp. 754.)

The following observations on some of the most important remedies used in brain disease will be found deserving of attention:—

"Bromide of potassium can almost always be used with advantage to diminish the amount of blood in the brain, and to allay any excitement of the nervous system that may be present in the sthenic form of insomnia. That the first-named of these effects follows its use, I have recently ascertained by experiments upon living animals, the details of which will be given hereafter. Suffice it now to say that I have administered it to dogs whose brains have been exposed to view by trephining the skull, and that I have invariably found it to lessen the quantity of blood circulating within the cranium, and to produce a shrinking of the brain from this cause. Moreover, we have only to observe its effects upon the subject, to be convinced that this is one of the most important results of its employment. The flushed face, the throbbing of the carotids and temporals, suffusion of the eyes, the feeling of fulness in the head, all disappear as if by magic under its use. It may be given in doses of from ten to thirty grains, the latter quantity being seldom required, but may be taken with perfect safety in severe cases.

"Since then, experiments with the cephalo-hæmometer and ophthalmoscope have abundantly confirmed these views, and more extensive experience in the treatment of cerebral congestion has placed the matter beyond the possibility of a doubt. Other observers have also confirmed the opinions here expressed.

"The prescription which I usually employ consists of bromide of potassium, \mathfrak{zj} ; water, \mathfrak{ziv} ; of this a teaspoonful is taken three times a day in a little water. Occasionally the bromide is increased to \mathfrak{ziss} , and sometimes a saturated solution—which contains gr. xxx. to \mathfrak{zj} —is used. I continue the medicine till drowsiness, a slight feeling of weakness in the legs, and contraction of the bloodvessels of the retina—detected by the ophthalmoscope—are produced. The more prominent head symptoms generally disappear in four or five days, and the results above-mentioned ensue in about ten days.

"Latterly I have used the bromide of sodium in corresponding doses instead of the bromide of potassium. It is more pleasant to the taste, and does not cause so much constitutional disturbance as sometimes follows the administration of the bromide of potassium in large doses.

"In conjunction with one or other of the bromides mentioned, I very generally employ the oxide of zinc, which experience has taught me is a powerful agent in relieving cerebral congestion, and giving tone to the nervous system. It should be given in doses of gr. ij, three times a day, either in the form of a pill or a powder, and to avoid any nausea should be taken after meals. At the end of about ten days it will generally be found that all symptoms of congestion—subjective and objective—have disappeared, leaving a little debility and mental depression. It then becomes expedient to give tonics and restoratives, and those which have a special action on the nervous system are to be preferred. Among them, strychnia, phosphorus, and cod-liver oil stand first.

"Strychnia may be advantageously administered in conjunction with iron and quinine dissolved in dilute phosphoric acid, as in the following formula:—Strychniæ sul., gr. j; ferri pyrophosphatis, quiniæ sul., \mathfrak{ss} \mathfrak{zj} ; acid. phos. dil., zingiberis syrupi, \mathfrak{ss} \mathfrak{zij} . M. ft. mist. Dose, a teaspoonful three times a day in a little water. I prefer this extemporaneous prescription to any of the syrups or elixirs with like ingredients. If for any reason the iron and quinine are not indicated, the strychnia can be given alone with the dilute phosphoric acid.

"Phosphorus almost always acts well in such cases as those under consideration. It may be given in the form of the phosphorated oil, as in the follow-

ing formula: \mathcal{R} Olei phosphorat. \mathfrak{Zss} ; mucil. acaciæ, \mathfrak{Zj} ; olei bergami, gtt. xl. M. ft. emulsio. Dose gtt. xv three times a day. A very elegant preparation of phosphorus is the phosphide of zinc. . . . My experience with this medicine has been very extensive. I have never known it to produce the least unpleasant effect, and have rarely been disappointed in obtaining the full results to be expected from phosphorus in corresponding doses. I am therefore not in accord with Dr. M. Clymer on this point.

"The chemical formula of phosphide of zinc is PZn_2 , and consequently a grain represents a little more than one-seventh of a grain of phosphorus. The proper dose, therefore, is about the tenth of a grain. I usually prescribe it in cerebral congestion, according to the following prescription: \mathcal{R} Zinci phosphidi, gr. ij; rosar. conserv. q. s. M. ft. in pil. no. xxx. Dose, one three times a day. Instead of the conserve of roses, gr. x of the extract of nuxvomica may be substituted if strychnia is not being administered in some other form."

ART. 104.—*On some Cautions to be observed in the Use of Calomel Vapor Baths.*¹

By HENRY LEE, F.R.C.S.

(*The Lancet*, Feb. 17.)

Mr. Lee was the first to introduce calomel baths to the notice of the profession, and before doing so had labored to find out the cause of failure of the cinnabar and gray oxide of mercury. The cinnabar was decomposed by heat and gave off sulphurous acid, which irritated the lungs. The gray oxide was decomposed, and absorbing oxygen, became the binoxide, and acted more powerfully. Calomel, when used with water as he recommended, was, he thought, perfect; the skin was acted upon, and the lungs were not irritated. During the fumigation of dry calomel, hydrochloric acid was given off, which was very irritating to the lungs, but no bad results followed if water were used as well. In the case of a young woman in good health and well nourished, who was suffering from a syphilitic ulcer of the throat, twenty grains of calomel were volatilized in a teapot, and inhaled. The skin became cold and livid, the lips blue, and the pulse small. On a post-mortem (for the woman died), the lungs were emphysematous, and there was effusion into them. The other organs were healthy, and the fumigation, no doubt, caused the death; but if a little vapor of water had been present no harm would have happened. In another case, a man inhaled thirty grains of calomel from a teapot for four nights, for the cure of a hoarseness which had lasted two years, and which had resisted a great variety of treatment. The hoarseness was cured without salivation, but the man has suffered ever since from a cough and a pain in the chest. The lungs are not diseased, and no tubercle is present. With regard to the bath, Mr. Lee has not seen bad results, except from pre-existing disease. He does not salivate, but gets a slight tenderness of the gums.

ART. 105.—*On Turpentine in Peritonitis.*

By M. VIDAL.

(*Medical Times and Gazette*, February 24.)

At a recent meeting of the Paris Hospital Medical Society, M. Vidal took occasion to call the attention of his colleagues to the great value of turpentine as an external application in partial and general, and even in puerperal peritonitis. Trousseau, originally importing this remedy from England, employed it in large doses internally. In peritonitis, M. Vidal soaks a piece of flannel

thoroughly in the turpentine, and having applied it over a large portion of the abdomen, covers it with gummed silk. It remains on until vesication is produced at several points, when the silk is removed in order to allow of the evaporation of the turpentine. Under this application he has in many instances seen patients, who were very far gone, rally completely and recover. M. Bourdon inquired whether this application of turpentine had been employed in any cases from the commencement, and whether leeches, cataplasms, etc., had been also resorted to. In this case the turpentine would have acted just like an ordinary blister, and it is well known that in advanced peritonitis advantage is sometimes derived from resorting to blisters and Todd's mixture. He also suggested that the turpentine might act in the same way as the castor oil colledion employed by R. H. Latour, by preventing transpiration and the contact of air. M. Vidal believes, however, that turpentine does not act in this way, but as an energetic and diffused revulsive, while at the same time it undergoes absorption by the skin and respiratory organs. At first he did not employ it so exclusively in peritonitis as he now does, as he then used to apply also leeches. Now he resorts without hesitation to the turpentine at once. He generally combines with it the application of ice, or what might be termed compression by means of ice, and under certain circumstances he would still use leeches. M. Moutard-Martin, believing the action of the turpentine to be solely topical, asked whether comparative trials of it and of blisters had been made; but M. Vidal is convinced that it also acts internally. That it is speedily absorbed is shown by the odor of the urine; while soon after its application, the patients seem as if a cordial had been administered to them, and their cyanosed lips soon recover their color.

ART. 106.—*Mechanical Restraint in Cases of Insanity.*

By DAVID YELLOWLEES, M.D., Medical Superintendent of the Glamorganshire County Asylum.

(*The Lancet*, May 18.)

In a letter to the Editor of *The Lancet*, Dr. Yellowlees states that he never hesitates to use restraint when other means fail, if he thinks it for the patient's good. The cases requiring it are very rare, but it is as certainly right to use it when required as it is wrong to use it when unnecessary. To condemn restraint under all circumstances, merely because it has been, or might yet be, abused, is as unreasonable as to forbid all use of stimulants because they have been, or may yet be, used too freely.

Dr. Yellowlees knows there are some who utterly condemn restraint and everything that resembles it, under all possible circumstances, and who avow that they would *never* use it, even if they thought it advisable in any individual case. He thinks this a false position, founded on an erroneous and unworthy view of the system which it professes to uphold.

The noble revolution which Dr. Conolly was chiefly instrumental in effecting did not consist merely in the removal of the leg-locks and straight waistcoats; it consisted in the introduction of totally new ideas as to the insane, and a totally new method of dealing with them—in the substitution of kindness, sympathy, and skilful treatment for harshness, severity, and neglect, and in making the welfare of the patient the constant and paramount aim. This, of course, implied the abolition of all personal restraint to the utmost possible extent consistent with his welfare, *but no further*. So long as personal freedom is the best thing for the patient it is *right*, when it is not the best thing for the patient it is *wrong*. There is a mistaken tendency to regard "non-restraint" as something in itself of mysterious virtue and vital importance, as a kind of sacred rule never, under any circumstances, to be violated; its only true ground and its absolute limit is the good of the individual patient.

The indiscriminate use of restraint or seclusion cannot be too strongly condemned, but to abjure them under all circumstances is only another illustration of the proverb that the extreme of right is wrong. The undue use of "chemi-

cal restraint," or other means of repression, would be an evil substitute for their occasional use; and to demand from attendants vigilance that shall never flag, and patience that shall never tire, is to expect more than man can render.

In conclusion, Dr. Yellowlees says the above views are not at all singular, as the Editor of *The Lancet* seems to think; but are held by many of our best asylum superintendents.

ART. 107.—On the Use of a Hemp Saw for the Excision of Polypi.

By ALFRED MCCLINTOCK, M.D.

(*Medical Press and Circular*, March 13.)

At a meeting of the Dublin Obstetrical Society on February 17th, Dr. McClintock read a paper on the use of a hemp saw for the excision of polypi. He said he had had but a very limited experience of this method of excising vaginal and uterine tumors, but he thought it would prove very simple and useful, and in many cases more feasible than other modes of operation. His attention was first directed to the matter by the paper read by the President on the subject of decapitation in utero, by sawing the neck through with a hempen cord. It occurred to him that the same method might be applied for the extirpation of uterine polypi; and he determined to use it on the first opportunity that presented itself. Recently Dr. Symes, of Kingstown, sent to him a married lady who had borne four children, and who was suffering from repeated hemorrhages from the vagina. A large polypus was discovered in the vagina, and on the 10th of last month he met Dr. Symes for the purpose of extirpating it. The polypus was the size of a turkey's egg, the neck of it being about as thick as a man's thumb. Dr. McClintock then described the operation. The polypus having been drawn down to the vulva, a loop of fishing-line, introduced through Gooch's canula, was cast round the neck of it, and in thirty-five seconds by the sawing process it cut through the neck of the growth, which was then removed by the vulsellum. The tumor weighed two and a half ounces, and the section of the pedicle was one inch in diameter; it was a true polypus, presenting a well-marked capsule. The operation was facile, expeditious, and unattended with pain or bleeding. No doubt the polypus was of a kind that admitted of removal by means of the scissors or écraseur, so that it presented no unusual difficulties. The ligature was applied and used through Gooch's double canula to protect the vagina from injury by friction of the ligature. He had seen the wire rope break in attempting to remove fibrous tumors, thus causing great inconvenience. The hemp ligature might also give way, but they could guard against that occurrence by employing a long piece of cord, and from time to time bringing a fresh portion to act upon the surface they were operating on. Dr. McClintock then mentioned the results of several experiments which he had made to test the efficacy of the cord. In ten minutes he cut through the tendon in the hock of an ox, which he did not think the écraseur could be capable of doing. He admitted that it was possible that this method of operation might be followed by hemorrhage or pyæmia, but this was a matter which experience alone could determine.

ART. 108.—On Condurango in Cancer.

By J. W. HULKE, F.R.S., and CAMPBELL DE MORGAN, F.R.S.

(*Medical Times and Gazette*, February 4.)

At a meeting of the Clinical Society on February 9th, Mr. J. W. Hulke read a paper on "Cases of Cancer treated with Condurango" in the Middlesex Hospital. The author and his colleague, Mr. Campbell De Morgan, were enabled by the present of a parcel of condurango bark by an American surgeon to begin, in November last, a second trial of this reputed remedy for cancer. When this supply ran short, the trial was continued with bark bought of Messrs. John Bell & Co., and with a fluid extract very liberally placed at the author's dis-

posal by its makers, Messrs. Bliss, Keine & Co., of New York. After briefly noticing its natural history, and the physiological and therapeutic properties assigned to the condurango, the author proceeded to relate two cases of ulcerated hard cancer of the female breast, and one of rodent cancer of the face, in both of which the exhibition of the reputed remedy failed to modify favorably, or to retard the progress of the disease. The result of this trial confirmed the author's first one, made in August and September last, which showed that, as a remedy for cancer, condurango was absolutely inert.

Mr. De Morgan also read a paper containing a report of three cases treated at the Middlesex Hospital, showing the uselessness of condurango; and he mentioned others which had come to his notice, tending to prove the same thing. He considered it very important that the fact should be widely made known that this and the other so-called remedies for cancer had really no effect on the disease, as statements of wonderful cures were inducing the public to put faith in them, and to waste time and money in their trial. Of the cases on which he had tried the medicine, two were advanced cancers of the breast, and one was uterine. The patients were suffering generally from the effects of the disease, and were considered fit cases on which to try the experiment. The medicine was given regularly and carefully in the manner directed. In no one instance was there the slightest improvement in the conditions of the local disease, which advanced at the same rate as before; neither was there any diminution of pain or discharge, or any change for the better in the characters of the ulcerations. There was not, moreover, any general improvement. For a day or two they thought they had a better appetite, but this was the mere transient change one always sees in cancer patients. None of the changes which were said to take place in the conditions of the urine or the perspiration had been observed. Mr. De Morgan's impression was that the downward progress of these patients had not been arrested for one instant by the agency of the drug.

ART. 109.—*On the Internal Use of Carbolic Acid.*

By JAMES ALLAN, M.B., L.R.C.S.E., Newmilns, Ayrshire.

(*British Medical Journal*, February 10.)

In this paper Dr. Allan points out shortly diseases in which he believes, from the results he has obtained, carbolic acid may be used with success. In the treatment of mucous tubercles and primary syphilitic sores, he has met with a considerable amount of success. The method of using it is by applying a solution of equal parts of carbolic acid and water once daily, and by the constant application of a lotion of eight grains of carbolic acid to the ounce of water. If the acid be applied in a concentrated form, it causes the sore to assume a whitish appearance, after which a thin yellow scab forms, which separates in three or four days. In all cases the pain was inconsiderable, and the destruction of the sores rapid. According to the trials in which Dr. Allan has employed carbolic acid in the treatment of syphilis, he is unable to form a definite opinion as to its merits or defects. In two cases which resisted all the usual remedial means it was prescribed, and in a few weeks all the symptoms had disappeared. The effects have also been investigated by Dr. Köhn in Hebra's wards, in whose experience the beneficial results were not so well marked as to recommend its administration.

Dr. Allen agrees with many observers as to the beneficial effects of carbolic acid in the fermentative class of dyspeptic cases, in which there is flatulence with evolution of gas, with a tendency to vomit. For this it can be administered either in solution in grain doses, or in the form of a pill. Thus given it stimulates the stomach, checks the fermentative process, and produces an evolution of gas and evacuation of flatus. In hemorrhagic ulcer of the stomach, a few administrations of grain-doses, freely diluted, are very efficacious in checking the bleeding, provided, as in all cases, due attention has been paid to the diet. Good results have also been obtained in cases of chronic gastric catarrh,

especially if some stomachic sedative be first given. It should be given upon an empty stomach, in quarter to half-grain doses much diluted.

In considering the different processes which take place during the decomposition of the pulmonary tissue in phthisis, on account of the deteriorated state of vitality, it would seem that, if an antiseptic could be introduced by any means which would not derange the general functions, the disease might be arrested. From a careful review of the cases recorded in the periodical literature, as well as from the results of practice which Dr. Allen has himself seen, he is certain that when pulmonary disorganization has taken place, carbolic acid has no effect to eradicate it. In the treatment of certain skin diseases, Dr. Allen believes carbolic acid to be of much use, especially in those of an obstinate nature. Good results have been obtained in psoriasis, pityriasis, and prurigo. It should be administered in the form of pills, each containing one grain, and from six to nine of these given daily, and gradually increased. In gangrene of the lungs it removes the fetid odor, and seemingly produces good. In chronic bronchitis and oozing hemorrhages of the air passages it is useful; so, also, in mucous diarrhoea of the large bowel, in the form of an injection, when preceded by some alkaline solution.

ART. 110.—*Bromide of Sodium.*

By MEREDITH CLYMER, M.D.

(*The Medical World*, October, 1871.)

Whatever may be the real therapeutic value of the bromide of potassium in the treatment of epilepsy and other disorders of the nervous system, it has come to be generally acknowledged that its prolonged use is often attended with serious inconveniences, and even dangers, as dulness of the mental faculties, loss of memory, great muscular feebleness of the lower extremities, etc. Dr. Clymer has heard many epileptics declare that they would rather suffer from their fits than from the condition brought on by the doses of bromide of potassium necessary to suspend their attacks, or lessen the number of them. It is, therefore, a matter of some moment to those who treat nervous disorders to find a remedy of that efficacy so largely claimed for the bromide of potassium in some affections.

There is reason to believe that in the *bromide of sodium* a happy substitute has been found that will fully meet every indication for which the bromide of potassium has been given, while it is much better tolerated by the system, and free from the objections which are justly urged against the latter. For some time past, Dr. Clymer has habitually used the bromide of sodium in all disorders of the nervous system where before he prescribed the bromide of potassium, and, so far as his own experience goes, speaks positively to this point. He has given it in a number of cases of epilepsy continuously for months without any of the unpleasant symptoms which so constantly follow the prolonged administration of the potassium salt, excepting the eruption, and with the best results in mitigating or suspending the paroxysms. Dr. Decaisne has given the bromide of sodium for a year without its producing the systematic saturation so frequent during the long and continuous exhibition of the bromide of potassium. According to Nimias, of Venice, this latter salt accumulates in the various organs, the brain, spinal cord, lungs, liver, etc., and is neither readily eliminated nor assimilated. Soda is the alkali found throughout the body, and in all the secretions, and would naturally be more readily absorbed and appropriated than the potassic salt. Another point in favor of the use of the sodic rather than the potassic salt, and which has not yet been mentioned, is the fact of the depressing influence of the salts of potash on the heart when they are largely or long given. No such effects are alleged to follow the continuous use of the salts of soda.

The taste of the bromide of sodium is much less unpleasant than that of the bromide of potassium, being very like common salt, and it may be used to replace the latter, mixed with the food, as with bread and butter, eggs, in milk,

etc. Hence it is of more easy administration than the bromide of potassium, to the taste of which some persons have invincible repugnance, and increasing with its use.

It is of the first importance that bromide of sodium should be perfectly free of all impurities, particularly of iodine. Larger doses of the hydrated salt are required than of the anhydrous, for it crystallizes with four equivalents of water. According to Dr. Morin (*Comptes Rendus* of the Académie des Sciences, January and April, 1870), anhydrous bromide of sodium contains 11 per cent. more bromide than bromide of potassium. Dr. Morin and Balard, the discoverer of this salt (1826), give the following table of the approximate amount of bromide in the corresponding quantities of bromide of sodium and bromide of potassium :—

BROMINE.		BROMIDE OF SODIUM.		BROMIDE OF POTASSIUM.
Grammes.		Grammes.		Grammes.
3.33	4.33	5.00
6.66	8.66	10.00
10.00	13.00	15.00
13.63	17.33	20.00
16.06	21.66	25.00
12.00	26.00	30.00

The doses of bromide of sodium are about the same as those of bromide of potassium. In epilepsy, Dr. Clymer usually gives 20 grains three times daily, and has rarely gone above that amount. It sometimes seems to cause or encourage constipation.

ART. 111.—*On Bromide of Calcium.*

By WILLIAM A. HAMMOND, M.D.

(*New York Medical Journal*, December 1871.)

Dr. Hammond states that during the last few months he has used this article in a number of cases in which the bromides were indicated, and is satisfied of its great efficacy.

"The dose," he says, "is from fifteen to thirty grains or more for an adult. It is especially useful in those cases in which speedy action is desirable, as, owing to its instability, the bromide is readily set free, and its peculiar action on the organism obtained more promptly than when either of the other bromides is administered. Chief among these effects is its hypnotic influence, and hence the bromide of calcium is particularly beneficial in cases of delirium tremens, or in the insomnia resulting from intense mental labor or excitement.

"Thus, I gave a gentleman, who, owing to business anxieties, had not slept for several nights, and who was in a state of great excitement, a single dose of thirty grains. He soon fell into a sound sleep, which lasted for seven hours. The next night, as he was wakeful, I gave him a like dose of bromide of potassium, but it was without effect, and he remained awake the whole night. The subsequent night he was as indisposed to sleep as he ever had been, but a dose of thirty grains of bromide of calcium gave him eight hours' sound sleep, and he awoke refreshed and with all unpleasant cerebral symptoms—pain, vertigo, and confusion of ideas—entirely gone.

"In a number of other instances a single dose has sufficed to induce sleep—a result which very rarely follows the administration of one dose of any of the other bromides.

"In those exhausted conditions of the nervous system attended with great irritability, such as are frequently met with in hysterical women, and which are indicated by headache, vertigo, insomnia, and a mental condition of extreme excitement, bromide of calcium has proved in my hands of decided service. Combined with the syrup of the lacto-phosphate of lime, it scarcely leaves anything to be desired. An eligible formula is—*R* Calcii bromidi, ʒj; syrup.

lact. phos. cal. ℥iv . M. ft sol. Dose, a teaspoonful three times a day in a little water.

"In epilepsy I have thus far seen no reason for preferring it to the bromide of potassium or sodium, except in those cases in which the paroxysms are very frequent, or in cases occurring in very young infants; of these latter, several which had previously resisted the bromide of potassium, have yielded to the bromide of calcium. It does not appear to cause acne to anything like the extent of the bromide of potassium or of sodium."

ART. 112.—*Some of the Ill-Effects of Bromide of Potassium.*

By T. O. Wood, M.D., Medical Superintendent of Dunston Lodge Asylum.

(*British Medical Journal*, October 14, 1871.)

The author states that bromide of potassium, "when given continuously and in large doses, produces a great variety of results, depending generally upon the constitution and bodily condition of the patient at the time of its administration. Its most dangerous effect is when, after a course of comparatively small doses which do not seem to be taking any great hold upon the system generally, or upon the mental symptoms to control which it is given, it *suddenly*, and without apparent cause or warning, displays its cumulative effect, and rapidly reduces the patient to a condition of great bodily prostration, and completely alters the character of the mental symptoms. This physical prostration is at once evident. There are great muscular debility; dimness of sight, with dilated pupils; irregular gait, the patient reeling as though intoxicated; whilst nausea, vomiting, or purgation, with abdominal pain of a dull aching character, may also be present; the breath having a disagreeable odor, which seems peculiar to those who have been for any length of time under the influence of the bromide. Its effect upon the mental symptoms is no less marked. The patient who has been violently excited, glorying in his imaginary power of body and mind, becomes desponding, sullen, melancholic, and frequently lachrymose, often even despairing. One patient, who was discharged from this asylum 'recovered,' has since told me that he knew and felt for some time afterwards the effect of the medicine upon his mind. It produced a feeling of despondency which at times quite overcame him."

Having read Dr. Clouston's admirable paper on the combination of tincture of cannabis indica with the bromide, Dr. Wood resolved to give it a trial. Dr. Clouston says, "Cannabis indica being a diuretic, and the bromide of potassium being carried off by the kidneys, it is probable that the former in that way helps to prevent the cumulative action of the latter when given alone."

Dr. Wood tried this combination in two cases, and with very satisfactory results. In one case the bromide was pushed to a drachm and a half, with the same quantity of tincture of cannabis indica, and eventually up to two drachms of each drug thrice daily, with the effect of producing "a state of drowsy calmness of the nervous system," and without, in this instance, producing any symptoms of dyspepsia, of physical exhaustion, or of threatened syncope; and thus, as far as these cases go, proving the utility of the combination.

ART. 113.—*Quinine.*

(*Medical Times and Gazette*, February 3.)

Our knowledge of the physiological and therapeutical actions of this invaluable alkaloid have been recently much extended by the labors of Binz, Ranke, Kerner, Zuntz, Scharrenbroich, and Schulte. We propose to lay before our readers a *résumé* of the chief results obtained.

Binz finds that quinine has the power of arresting the processes of putrefaction and fermentation in a high degree, and that it is an active poison for all

low organisms, animal and vegetable. According to Cohnheim's views, pus, being mainly a collection of white blood-globules, which have passed through the walls of the vessels—further, quinine having the power of arresting the motion of the white corpuscles, and hence preventing their exit from the vessels—the alkaloid arrests, or at all events diminishes, the formation of pus during the course of inflammation. Moreover, it destroys the ozonizing power of certain substances; and as the red corpuscles have this power, quinine in the blood probably diminishes oxidation of tissue, and lessens the production of heat. Ranke and Kerner, indeed, have found that quinine in large doses diminishes tissue changes, as is shown by the smaller quantities of urea and uric acid excreted; and there are many observations to show that in fevers it produces a decrement in temperature. Ranke and Kerner's experiments do not show, however, how far the lessening of tissue-waste is due to the direct action of quinine on oxidation, and how far to the indirect action of the alkaloid through the nervous system. Two methods have been employed for ascertaining the direct influence of quinine on oxidation. Harley added quinine to the blood, and found that this, when so treated, took up less oxygen, and gave off less carbonic acid, than blood which had not been so treated. This method is inconvenient of application, and liable to error. Zuntz employed the changes in the alkalinity of the blood for arriving at the same results. Schulte has extended these researches. If fresh blood be drawn, a development of acid begins in it, and continues, at first rapidly, then more slowly, till putrefaction sets in. Of course this acidification depends on oxidation; and the diminished alkalinity of the blood, thereby produced, furnishes a test of the rapidity with which oxidation proceeds. Schulte has confirmed the observation first made by Zuntz and Scharrenbroich, that quinine and berberine lessen the production of acid. Harley's observation is thus confirmed. Cinchonine produces similar results to quinine, though in a very inferior degree. Picrate of sodium is nearly as powerful as quinine. Zuntz found, as Ranke and Kerner had previously done, that quinine, in ten-grain doses, lessens the daily excretion of urea by one-third or more. Unruh has found the same to occur when quinine is administered in fevers; but his observations are open to objection. Binz's experiments are curious, and show that when putrefying liquids are injected into the circulation the temperature of the body rises; but if the fluids be previously mixed with quinine, whereby the putrefactive processes are arrested or destroyed, the rise in temperature is either entirely arrested or considerably diminished.

We think that these experiments have an important bearing on practice, and that they are in accordance with the teachings of clinical observation. It has been too much the fashion to assume that the therapeutical actions of quinine are entirely different from its effects when administered in health. We apprehend that the true method of commencing the study of the actions of medicines is first to ascertain their effects in health; then to observe their results in disease.

Dr. Grace Calvert has also recently announced the discovery of the power of quinine in preventing the development of fungi. He appears, however, to have been unaware of Binz's previous publication of the fact.

ART. 114.—On the Various Bad Symptoms Observed after the Administration of Quinine in large Doses.

By Dr. C. BINZ.

(*Lyon Médical*, Fevrier, 1872; *Gazette Hebdomadaire*, No. 8, 1872.)

The author, who has himself helped very much in the employment of quinine in medicine, has collected a number of cases showing the disadvantages that may attend the use of this therapeutical agent. The greater number of the cases which he brings forward show that the dangers of quinine in large doses do not present a very formidable character, and ought scarcely to be considered

in the presence of the dangerous symptoms of obstinate fever of an inflammatory or putrid character. It is, however, useful to be able to recognize them.

Disturbances of the nervous system and of hearing following the employment of too powerful doses of quinine are mentioned as having occurred in a great number of cases, but in these the preparation was often faulty. A case published by Giacomini proves that with so large a dose as ten grammes the prostration, vertigo, and loss of hearing and sight may rapidly disappear. Still it ought not to be forgotten that quinine is a cardiac poison, that in strong doses it may weaken the pulse and the arterial tension; this fact it is important to know in the treatment of affections in which it is necessary to raise the cardiac activity; such are cases of croupal pneumonia. The author quotes one case in which the administration of one and a half gramme of quinine in a patient suffering from croupal pneumonia increased the cyanosis and dyspnoea.

The auditory disturbances have generally but a limited duration. Maillot, who has treated more than 6000 patients by sulphate of quinine in large doses, declares that he has constantly observed the deafness to disappear in the course of a few days. He mentions, however, the case of an officer who, after taking quinine three times, in doses of six grammes, for a dangerous fever, remained completely deaf.

Many observers attribute to the use of quinine disturbance of speech carried even to mutism and persistent hoarseness. Briquet has observed four instances of incomplete and temporary amaurosis, and Graefe has published two cases of amaurosis following the use of quinine, in which no local change could be observed on ophthalmoscopic examination. In one of these latter cases the vision was restored.

Pulmonary hemorrhages and hemorrhagic purpura have been frequently observed after the administration of quinine.

With regard to the intestinal canal, which is one of the most sensitive organs to the irritating action of quinine in large doses, one ought to be on his guard against the introduction into the stomachs of fever patients of preparations of quinine which are soluble with difficulty. It has been demonstrated by M. Manassein that it is not the pepsine that fails in the gastric juice of feverish animals, but rather the free acids. It is scarcely possible that it can be otherwise in man. The instinctive desire manifested by the patients for acid drinks is a proof of this. The salts of quinine in a feebly acid solution are generally easily absorbed; they may, when they are not altered, be administered for several weeks without causing any inconvenience. When administered, on the other hand, in the form of powder and pills, the quinine, particularly the sulphate, is not very soluble, and excites in the stomach and intestinal canal the well-known symptoms of irritation with all its consequences. Morbid changes in those organs consecutive to the ingestion of quinine may be attributed then, in ordinary circumstances, to the faulty mode of administration made use of by the physician.

The kidneys and urinary passages are not indifferent to the influence of quinine. Briquet has observed quinine which was in great part eliminated by the urine, excite albuminuria and vesical catarrh; but in these cases the dose was very high, as much as four grammes; on the other hand, quinine in doses of one or two grammes may exercise favorable influence on cystitis.

ART. 115.—*Koumiss in the Treatment of Phthisis.*

By VICTOR JAGIELSKI, M.D.

(*British Medical Journal*, February 3.)

In Tartary, koumiss has been specially favored as a beverage from time immemorial, through the influence of religious observances; for, not being a distilled liquor, it escapes the Mohammedan proscription. "*Qui Muhammedi doctrinam sequuntur, lege Corano præscriptâ vinum adustum sumere vitantur.*" says one of the authors on that country. This ban gives that country prohibi-

tion against mania potatoria and delirium tremens, which, as well as phthisis, are amongst the unknown indigenous diseases in Tartary.

Dr. Jagielski does not, in this paper, discuss the physiological properties of koumiss, having already described them in his several publications on the subject. What he wishes to impress is:—

1. That the climate itself of Tartary does not give immunity from phthisis, and hence mere residence there would fail to benefit consumptive patients.

2. That the exemption of Tartary, Iceland, and Shetland from phthisis is not a mere coincidence, but arises from one and the same cause, which is common to all three of these countries—viz., the general use of koumiss by the inhabitants.

3. That koumiss alone in Tartary prevents and arrests all those morbid conditions of the body which are the usual precursors of consumption.

4. That the most favored spot in these British islands for a consumptive patient is his or her own comfortable home, since koumiss can be brought there to work out its marvellous curative power, and thus justify the tribute which Dr. Ucke and others pay to its virtues in styling it “a most excellent, if not the best, remedy for phthisis, both on account of its nourishing properties and healing effects upon the mucous membranes.”

ART. 116.—*Xylol, the New Remedy for Smallpox.*

By C. R. C. TICHBORNE, F.C.S., M.R.I.A.

(*Medical Press and Circular*, February 28.)

Xylol, xylene, or ethyl-benzene, as it has been respectively called, is one of a homologous series of hydrocarbons, of which the well-known benzene and toluene form the two first. These hydrocarbons are all formed from coal-tar naphtha. Xylol was first procured by Hugo Müller, but its nitro-compound had previously been discovered by Warren de la Rue in 1856. Coal-tar naphtha is submitted to fractional distillation until the part which boils at 141° is separated, this is submitted to the action of fuming sulphuric acid, which dissolves the xylol and leaves the other hydrocarbons. The xylol is then separated by distillation from this mixture.

Xylol is said to have been used by Dr. Zuelzer, the Senior Physician at the Charité Hospital at Berlin, with great success in cases of smallpox. The theory of its action would appear to be that xylol is taken up by the blood, and acts as a disinfectant. The vapor seems to the writer to possess faint, and not very well marked, anæsthetic properties—this may be due to the presence of a small quantity of benzol, or the other hydrocarbons. The antiseptic properties of this group of compounds are well known, and thus probably the specific action of this one. The boiling point is variously stated at 139° to 140° . The specimens examined by the writer, generally commenced to boil at about 135° C. The specific gravity was .866.

It is said that the purity of xylol is of importance, but unfortunately there is no very ready method by which the ordinary practitioner might detect its purity. It should be soluble in fuming sulphuric acid, but it is not soluble in the ordinary sulphuric acid of the Pharmacopœia.

It has a faint odor, something like benzol, and an aromatic taste. The dose is three to five drops for children; ten to fifteen drops for adults every hour to every three hours. It is quite harmless in reasonable doses. In Berlin it is given in capsules. As it is very insoluble the best method of giving it would be in an emulsion of almonds. When once assimilated it is rapidly oxidized in the body, this fact being demonstrated by the production of a peculiar odor in the urine, which, however, is quite distinct from xylol itself.

ART. 117.—*A Means of Arresting the Spread of Smallpox.*

By JOHN DAY, M.D.

(Australian Medical Journal.)

Dr. Day, in a paper "On a Means of Arresting the Spread of Smallpox," read at a meeting of the Medical Society of Victoria, explained his *modus operandi* of perfectly destroying the germs by which smallpox is propagated. His belief is, that the virus of smallpox is always associated with pus-cells, and the only way in which it can be destroyed is by oxidation. He proposes the use of peroxide of hydrogen as the agent for rapidly and thoroughly oxidizing and destroying the virus-germs given off from the bodies of smallpox patients. Peroxide of hydrogen, which, according to Schönbein, is composed of antozone and water in a state of chemical combination, undergoes a remarkable change in the presence of blood, and by mere contact with the corpuscles, its antozone is rapidly transformed into ozone—the oxygen of combination.

The particular form in which he would recommend the use of peroxide of hydrogen is that known as ozone ether—being a compound of absolute ether and peroxide of hydrogen. It is highly volatile, and may be diffused even through very large apartments, such as the wards of hospitals, by means of a spray-apparatus. It quickly destroys the sulphuretted hydrogen and other noxious gases, and when once diffused it is very persistent in its action.

As collodion, cold cream, and lard are occasionally used as topical applications in the treatment of smallpox, he mentions that ozonic ether can be mixed with any of these substances without undergoing any perceptible change in its chemical properties.

ART. 118.—*Hæmostatic Properties of Alnus Incana.*

By THOMAS R. DUPUIS, M.D., Professor of Botany in Royal College of Physicians and Surgeons, Kingston.

(Canada Lancet; and The Medical Record, Dec. 15, 1871.)

Dr. Dupuis recommends the *Alnus incana* (Tag alder), so common in the States and Canada, as an excellent hæmostatic. He has prescribed the bark both externally and internally, and has never observed any ill effects follow its use, except occasionally nausea and vomiting when taken too freely. Four cases are related—three of wounds and one of serious epistaxis—which were successfully treated with this remedy. He has also prescribed it in hæmoptysis and in menorrhagia with benefit; it is also well adapted to any internal or external passive hemorrhages in which astringents are generally esteemed beneficial.

In closing his article, Dr. Dupuis solicits for the decoction of the bark of Tag alder a trial from all those who may be interested in the development of the medical remedies of our own country.

ART. 119.—*On the Therapeutic Value of the Nitrite of Amyl.*

By H. C. WOOD, Jun., M.D., of Philadelphia.

(American Journal of the Medical Sciences, Oct. 1871.)

Dr. Wood has arrived at the conclusion that the nitrite of amyl in its action on the lower animals is an almost universal sedative on the nervous system, while on the circulation its uniform action is to lessen arterial blood-pressure; and he thinks that it also catalytically arrests oxidation. Dr. Wood's views, however, are not in accordance with those of some other writers, who believe that the nitrite acts on man as a powerful stimulant. It is true that the immediate effects of this agent on man are fulness of the head, flushing of the face,

and violent action of the heart; but these symptoms are due to the dilatation of the capillaries, and are associated with lessened arterial pressure. In answer to the question as to the practical value of the nitrite of amyl, Dr. Wood suggests that as it checks oxidation, and lowers temperature, it may possibly be of use in some fevers, but he has no clinical evidence to adduce in support of this view. In tetanus it ought to be theoretically of great value, because in this disease there is a condition of exalted functional activity of the reflex motor centres, and of these centres the nitrite is a powerful depressant, and there is some evidence that it has been serviceable in this affection. In *angina pectoris* the nitrite is of very great value in affording rapid and permanent relief, and not only in true *angina pectoris*, but also in those cases where there is well-marked valvular disease of the heart. Dr. Wood has had an opportunity of using the nitrite in a case of valvular disease, attended with severe suffering, and its effect in relieving the pain, after the failure of other remedies, was astonishing. With regard to the mode of administration, it has always hitherto been given by inhalation, and its insoluble and highly volatile nature renders it unfit for exhibition either in solution or mixture; but Dr. Wood thinks that it might be given when dropped upon a piece of sugar; when it is to be inhaled, five drops should be placed upon a handkerchief, and held close to the nostrils, the pulse being closely watched and taken as a guide as to the continuance or withdrawal of the drug.

ART. 120.—*Toxical Studies on Chloral Hydrate.*

By BENJAMIN W. RICHARDSON, M.D., F.R.S.

(*British and Foreign Medico-Chirurgical Review*, April.)

The most important subject, in a toxicological point of view, that has been under discussion since our last report, has relation to chloral hydrate. The increasing employment of this narcotic by the members of the general public, without the advice of the professors of medical science, has been attended by several fatal occurrences; while in instances where fatal results have not taken place, peculiar symptoms have followed the frequent self-administration of the narcotic—symptoms of serious import, and demanding ready recognition. We have, consequently, devoted some labor to the investigation of certain facts bearing on the toxicological history of chloral hydrate, to which, and the results of our inquiries, we would now direct attention.

1. We have endeavored to ascertain what is a dangerous and what a fatal dose of chloral hydrate. The conclusion at which we have been able first to arrive on this point is, that the maximum quantity of the hydrate that can be borne, at one dose, bears some proportion to the weight of the animal subjected to its influence. The rule, however, does not extend equally to animals of any and every class. The proportion is practically the same in the same classes, but there is no actual universality of rule. A mouse weighing from three-quarters of an ounce to an ounce will be put to sleep by one-quarter of a grain of the hydrate, and will be killed by a grain. A pigeon weighing twelve ounces will be put to sleep by two grains of the hydrate, and will be killed by five grains. A guinea-pig weighing sixteen ounces will be put by two grains into deep sleep and by five grains into fatal sleep. A rabbit weighing eighty-eight ounces will be thrown by thirty grains into deep sleep, and by sixty grains into fatal sleep.

The human subject, weighing from one hundred and twenty to one hundred and forty pounds, will be made by ninety grains to pass into deep sleep, and by one hundred and forty grains into a sleep that will be dangerous.

From the effects produced on a man who had of his own accord taken a hundred and twenty grains of the hydrate, and who seemed at one period to be passing into death, we were led to infer that in the human subject one hundred and forty grains should be accepted as dangerous, and one hundred and eighty as a fatal dose. Evidence has, however, recently been brought before us which leads us to think that, although one hundred and eighty grains would in most

instances prove fatal, it could, under very favorable circumstances, be recovered from.

Dr. Hills, of the Thorpe Asylum, Norwich, has, for example, favored us with the facts of an instance in which a suicidal woman took no less than *four hundred and seventy-two grains* of the hydrate dissolved in sixteen ounces of water, and actually did not die for thirty-three hours. Such a fact, ably observed as it was, is startling; but it does not, we think, militate against the rule that one hundred and forty grains is the maximum quantity that should, under any circumstances, be administered to the human subject.

2. A second point to which our attention has been directed is, what quantity of hydrate of chloral can be taken with safety at given intervals for a given period of time, say of twenty-four hours. To arrive at some fair conclusion on this subject, we calculated from a series of experiments the time required for the development of symptoms from different doses of the hydrate, the full period of the symptoms, and the time when they had entirely passed away. Great difficulties attended this line of investigation; but we may state, as a near approximation to the truth, that an adult person who has taken chloral hydrate in sufficient quantity to be influenced by it, disposes of it at the rate of about seven grains per hour. In repeated doses, the hydrate of chloral might therefore be given at the rate of twelve grains every two hours for twenty-four hours, with less danger than would occur from giving twelve times twelve (144) grains at once; but we do not think that amount ought, except in the extremest emergencies, to be exceeded, in divided quantities.

3. A third point to which we have paid attention is, the means to be adopted in any case when, from accident or other cause, a large and fatal dose of chloral hydrate has been administered. We can speak here with precision. It should be remembered that this hydrate, from its great solubility, is rapidly diffused through all the organism. It is in vain, consequently to attempt its removal by any extreme measures after it has fairly taken effect. In other words, the animal or person under chloral, like an animal or person in a fever, must go through a distinct series of stages on the way to recovery or death; and these stages will be long or short, slightly dangerous or intensely dangerous, all but fatal or actually fatal, according to the conditions by which the animal is surrounded. One of the first and marked effects of the chloral is reduction of the animal temperature; and when an animal is deeply under the influence of the agent, in the fourth degree of narcotism of Dr. Snow, the temperature of its body, unless the external warmth be carefully sustained, will quickly descend seven and even eight degrees below the natural standard. Such reduction of temperature is itself a source of danger; it allows condensation of fluid on the bronchial pulmonary surface, and so induces apnoea, and it indicates a period when the convulsion of cold (a convulsion which sharply precedes death) is at hand.

We offer these explanations in order to indicate the first favorable condition for the recovery of an animal or man from the effects of an extreme dose of chloral hydrate. It is essential that the body of the animal be kept warm, and not merely so, but that the air inspired by the animal be of high temperature. The first effort to recovery, in short, should consist in placing the animal in a warm air. This fact is perfectly illustrated by experiment on the inferior animals. In the pigeon an air of 95° Fahr. is most favorable, in the rabbit an air of 105° to 110°, in the dog the same. In man the air to be breathed should be raised to and sustained at 90° Fahr. at least.¹

The next thing to be remembered in the recovery of persons under the fatal influence of chloral hydrate is to sustain the body by food. I find that even under deep sleep from the narcotic, although the process of waste is less than is common under natural conditions of rest, there is still a very considerable waste in progress, which, if not made up, is against recovery. I find also that

¹ We have no doubt it will be found, as the chronicle of death from chloral hydrate increases, that the mortality from the agent will be the greatest when the thermometrical readings are the lowest, and *vice versa*.

the digestive and assimilating powers, though impaired during sleep from chloral, are not arrested, but may be called into fair action with so much advantage, that if two animals be cast into deep sleep by an excessive quantity of the narcotic, and one be left without food and the other be artificially fed on warm food, one-fourth of the chance of recovery is given to the animal that is supplied with food. In the human subject warm milk, to which a little lime-water has been added, is the best food. Milk is very easily administered mechanically, and it should be administered in the proportion of half a pint every two hours.

4. The fourth point to remember is to sustain the breathing; in the inferior animals the question of life and death can be made to turn on this pivot. But the artificial respiration must be carried out with great gentleness; it must not be done by vehement movements of the body or compressions of the chest, but by the simple process of inflating the lungs by means of small bellows, through the nostrils. We have devised in the course of our researches various instruments for artificial respiration—viz., a small double-acting bellows, a small syringe, and a double acting India-rubber pocket-bellows: and we have lately made an instrument which acts by a simpler method still—i. e., we merely attach to a single hand bellows a nostril-tube, and gently inflate the lungs, letting the elasticity of the chest-wall do the work of expiration. A little valve near to the nostril-tube effectually stops all back currents from the lungs into the bellows. For the human subject, five charges of air from the bellows should be given at intervals of five seconds apart.

The symptoms of acute poisoning by chloral hydrate are, briefly, profound coma, great muscular relaxation, apoplectic breathing, and flushing of the face and neck, with intermissions of pallor. The eyes are usually rolled upwards as under chloroform, and at times, as impressions of motion are made on the surface of the body, there is muscular tremor, which may pass into convulsion. In time the extremities become cold, and the bronchial surfaces become charged with frothy mucus, which greatly impedes the breathing and hastens the final result.

The chronic symptoms of chloral-poisoning are—sleeplessness, unless the narcotic be taken in very large doses; great mental irritability, and muscular prostration; uncertainty of movement, with tendency to fall forward; caprice of appetite and frequent nausea. In some cases there is injection of the conjunctivæ, and in other cases yellowness. The urine, in extreme cases, contains albumen, and the bowels are commonly constipated, the evacuations being white and hard. Chloral hydrate does not produce the ecstatic dream or delirium caused by opium or haschich; on the contrary, it causes, through all the stages of its action, a sense rather of depression than of elevation of mental faculty.

ART. 121.—*Therapeutic Uses of Hydrate of Chloral.*

By OSCAR LIEBREICH, M.D.

(*British Medical Journal*, March 2.)

Dr. Oscar Liebreich, in a third edition of his treatise on hydrate of chloral, gives a general view of the classes of disease in which observation has allowed a general opinion to be formed as to the merits of the remedy. Numerous experiments in all countries have established the fact that chloral has the property of producing sleep in all pathological states where it is desirable to obtain this; and it does this without giving rise to any mischievous results. Some special peculiarities with regard to its action have, however, been observed. In a case of gout, for instance, a dose of hydrate of chloral produced excitement; but when the patient had been treated with carbonate of soda for a week, the same dose acted as a hypnotic. This, according to Dr. Liebreich, was due to the circumstance that, at first, the formation of urate of soda deprived the blood of its normal amount of alkali, and thus prevented the transformation of the chloral into chloroform. On the other hand, and in accordance also with

the theory of the transformation of chloral, it has been noticed that in typhus, where there is an excess of alkali in the blood, small doses of chloral readily produced sleep, while larger (even moderate) quantities gave rise to symptoms of poisoning. With regard to the use of chloral in operative surgery, the results of Dr. Liebreich's experiments have led him to expect with certainty that the drug may be used in such a way as to produce sufficient anæsthesia for even severe operations on the human subject. His observations of animals have shown him that there is a marked difference between a poisonous dose and the quantity sufficient to produce complete anæsthesia; and this meets the objection to chloral as compared with chloroform, that it is not introduced gradually into the system, but at once. Although experiments have shown that small doses of chloral have little influence on the circulation, Dr. Liebreich advises caution as to its use in heart-disease. In trismus and tetanus larger doses are indicated, as small quantities do not produce the necessary action on the spinal cord. Hydrate of chloral has been found to act beneficially in a number of cases of puerperal convulsions; and Dr. Liebreich is disposed to explain this by accepting Frerichs' theory, that the convulsive attacks are connected with the transformations of urea into urate of ammonia, and by supposing that besides the production of chloroform, there is a formation of hydrochloric acid which neutralizes the ammonia. Among other diseases in which there has been a general agreement of opinion as to the beneficial effects of hydrate of chloral, Dr. Liebreich mentions senile insomnia, delirium tremens, nervous asthma, chorea, dental convulsions in children, sea-sickness, etc.

ART. 122.—*Notes on Chloral.*

By Mr. FAIRTHORNE.

(*American Journal of Pharmacy*; and *Edinburgh Medical Journal*, February.)

Mr. Fairthorne says: "Pure hydrate of chloral, according to Dr. Rieckher, does not take fire when heated in a spoon over a spirit lamp, but evaporates without residue [the alcoholate when similarly treated inflames]. Nitric acid, sp. gr. 1.20, either cold or hot, should not produce any reaction with it. I find that its aqueous solution produces a dense precipitate when mixed with solution of subacetate of lead. The hydrate is readily dissolved by alcohol, ether, oil of turpentine, benzole, bisulphide of carbon, and the fixed oils. The solution in the last-named article might prove of value to the physician as a topical application, perhaps available in neuralgic or gouty affections. When equal parts of camphor (in small pieces) and hydrate of chloral in crystals are shaken together in a vial and allowed to stand, they become fluid, forming a clear solution. This might also be of use as an external remedy. When hydrate of chloral and sulphuric acid are mixed a great reduction of temperature takes place. Both pure chloral and its aqueous solution dissolve morphia freely. Quinia is soluble, to a considerable extent, in a strong solution of hydrate—six grains readily dissolving in one and a half fluidrachms. Cinchona, strychnia, veratria, aconitia, atropia, are also soluble in the same menstruum. From this it appears to be a general solvent for the alkaloids, and perhaps their solutions might be used with advantage for making ointments, or for mixing with oils for liniments, etc. The solution of quinine just mentioned is somewhat fluorescent, but not quite as much so as that of the sulphate. When chloral and glycerine are mixed a crystalline substance is formed in a few hours. Chloral is a good solvent for camphor or for crystallized carbolic acid, which it deprives of odor to a great extent, and renders quite soluble in water. When the latter solution is added to sulphuric acid, a pink-colored solid is produced, which is probably a compound of sulpho-carbolic acid and chloral. When benzoic acid is added to chloral, and slightly heated, it dissolves, and when cold the mixture solidifies into beautiful radiating crystals.

ART. 123.—Physical Restraint in the Management of the Delirium of Fever.

By J. T. MACLAGAN, M.D.

(*The Lancet*, Dec. 2.)

Dr. MacLagan, who, during the years 1864, '65, and '66 was medical superintendent of the Dundee Infirmary, a large hospital of 260 beds, has no hesitation in saying that physical restraint is often absolutely necessary to prevent a delirious patient from injuring himself and disturbing all the other patients in the ward, and that a folded sheet is by far the best means by which the necessary restraint can be applied. It is the kindest thing that can be done to the patient, it is the best for the other occupants of the ward, and the easiest for the attendants. It should, however, never be had recourse to unless it is really required, and should never be applied except by the instructions and under the direction of the medical attendant. It cannot be left to the nurse to determine either the cases in which it is proper to use restraint or the amount which is requisite to keep the patient in bed.

ART. 124.—Gelsemium in the Treatment of Irritable Bladder.

By W. SCOTT HILL, M.D., Augusta, Maine.

(*American Journal of the Medical Sciences*, Jan.)

Dr. Hill first observed the beneficial effects of gelsemium in irritation of the bladder, in a case complicated with gonorrhoea. In this case the patient, after taking a few doses of a preparation containing the medicine in question, was free from his pain while micturating, and the calls to evacuate the bladder much less frequent. As the other ingredients did not possess this property, Dr. Hill resolved to give it a trial. A case soon presented itself, and it was successfully employed.

In five cases reported by Dr. Hill the same symptoms were present, namely, frequent calls to void the urine, which was small in quantity, often passing *guttatim*, and excessive pain attending micturition. In three cases it was of long standing. In one case the origin of the disease was traumatic, and no permanent cure was anticipated so long as the stricture remained. In two cases the suffering was very severe. When last seen, there had been no return of the disease in either patient. One source of irritation in all the cases was evidently the acid urine, which was remedied by administering carbonate of potassa. Many nights of disturbed sleep, in addition to the pain, had overtaxed the nervous system, and the bromide of potassium was given as a sedative. The preparation of gelsemium employed was Tilden's *fid. ext.*

ART. 125.—On the Results of Warm Climates in the Treatment of Pulmonary Consumption, as Exemplified by an Analysis of 251 Cases.¹

By C. THEODORE WILLIAMS, M.D., F.R.C.P., Physician to the Hospital for Consumption, Brompton.

(*The Lancet*, May 14.)

The author, after dwelling on the difficulties involved in the selection of proper climates for consumptive patients, enumerates three grounds for forming an opinion. First, the alleged immunity from phthisis of certain localities.

¹ Read at a Meeting of the Royal Medical and Chirurgical Society, April 23.

Second, the existence in certain localities of atmospheric conditions the reverse of those under which the disease was contracted. Third, the ascertained results of certain climates on similar cases. After pointing out objections to the "immunity" ground, arising from diversity of the climatic conditions accompanying it, he discusses the second, or "contrast" ground of selection, and in order to explain it, the causation of phthisis is considered and shown to be probably twofold; first inflammatory—that is, influences which excite or keep up inflammatory affections of the lungs, such as great variations of temperature, a combination of cold and damp, etc.; second, septic—that is, influences which blight and corrupt the bioplasm of the blood or lymphatics, such as foul air, bad nourishment, the combination of warmth and damp, etc.

The differences in the type and distribution of phthisis arising from each of these causes are pointed out as indications in climatic treatment, dryness and warmth being desirable in consumption of inflammatory origin, and dryness and purity of air for consumption of septic origin.

The far greater importance of the third or "fact" ground is then dwelt on, and, after regretting the paucity of published information of this character, and especially of statistics, Dr. Theodore Williams furnishes, from the practice of Dr. C. J. B. Williams and himself, a statistical account of 251 cases of consumption who passed periods varying from one to eleven winters in warm climates out of the United Kingdom.

Sex.—190 were males and 61 females.

Age.—The average age at the onset of the disease was among the males 29.04, and among the females 23.39; nearly half the number of both sexes being attacked between twenty and thirty.

Predisposition.—Family predisposition was present in 52 per cent., and hereditary in 27.8 per cent.

Origin.—11 were cases of scrofulous phthisis, in 55 the disease had an inflammatory origin, in 41 a catarrhal, and in 2 a syphilitic; 2 cases followed on asthma, 6 were instances of hemorrhagic phthisis, and 130 of chronic consumption.

Hemoptysis existed in 62½ per cent. in varying amounts.

State of Lungs.—At the time the patients quitted England 61 per cent. were in the first stage, 21½ per cent. in the second, and 17½ per cent. in the third stage; 67 per cent. had one lung alone affected, 33 per cent. both lungs.

A comparison is then made between these cases taken separately and 1000 cases of which they form a part; and it is shown that in the "climate" patients the disease was more advanced, but at the same time more local in its character.

The climates of which a trial was made were classified as follows: 1. Moist temperate, as Pau, Bigorre, and Rome. 2. Dry climates of the Mediterranean, including the Riviera, Malaga, Algiers, &c. 3. Very dry climates of Africa, including Egypt, Cape of Good Hope, and Natal. 4. Moist Atlantic, as Madeira, the Canaries, and the West Indies. 5. Miscellaneous, including India, the Andes, New Zealand, &c. 6. Sea voyages.

The average of winters passed abroad by each patient was 2½; and of 18 patients who took voyages, the average number of voyages per patient was 2½.

The results of the climate on the *general* condition of these patients were that 65 per cent. were more or less improved, 6 per cent. remained stationary and 29 per cent. became worse. The *local* effects on the lungs were that in 43½ per cent. cure or decrease of the disease took place, in 14 per cent. it remained stationary, and in 42 per cent. it increased either in the way of advance or extension or of both.

The influence of the various groups of climates is next considered; and from the results of a table it is shown that the *moist* climates, temperate or warm, yielded a percentage of "improved" varying from 50 to 55, of "stationary" varying from 4½ to 14½, and of "worse" from 32 to 45; also that the *dry* climates yielded percentages of "improved" varying from 58 to 65, of "stationary" from 20 to 25, and of "worse" varying from 10 to 21; and that of the patients who took sea voyages, 89 per cent. improved, 5½ per cent. remained stationary, and 5½ per cent. became worse. The marked difference in the effects of the dry and moist groups gives rise to an inquiry as to whether it

might not be accounted for by difference in the class of cases sent to each group of localities. This results in the conclusion that except as regards the Pau cases, which were slightly more unfavorable than the rest, there was no important difference; and the natural inference is, that the less favorable progress of the patients was owing to some element in the moist climates themselves.

The leading meteorological features of the climates of Pau, Rome, and Madeira are then sketched, the effects of each pointed out, and their less favorable results attributed to their moisture and less stimulating character.

With reference to the question whether or no certain forms of consumption derive special benefit from any particular climate, the author deduces from 55 cases of phthisis of inflammatory origin who wintered in various warm or temperate localities, that a dry climate is more favorable than a moist one for the treatment of this form of the disease; and as regards phthisis of catarrhal origin the deduction from 41 patients is that "warmth and equability of climate are more important than dryness for patients of this description."

Forty of the climate cases died, and 202 were living at the last report. Among the former the average duration of life was eight years, and among the latter about nine years, which, when compared with the average of life among patients who did not go abroad, showed a slight extension of duration. The effect of cod-liver oil in prolonging life is demonstrated by the instances of thirteen patients, who, though they had the full advantages of climate, either omitted oil or took it irregularly. Among these, who are all dead, the average duration was four years eight months and a half.

Dr. Wilson Fox, professing his inability to grapple with the vast array of figures presented to the Society, was fain, by a comparison of the thousand cases brought before the Society some time ago by Dr. Williams with those now before him, to come to the conclusion that climatic results are *nil*, inasmuch as no single climate exhibits a result equal to all the cases quoted collectively. He also referred briefly to the fact that many cases of phthisis, apparently hopeless, live on in London year after year, and asked the author if cases of septic and inflammatory origin can be accurately distinguished, and if so, how.

Dr. Hermann Weber expressed his belief that mountain air most benefited cases of the inflammatory type, and that early hours and quiet habits had also much to do with success of treatment.

Dr. Heywood Smith quoted personal experiences of a winter on the Riviera in proof of the opinion enunciated by Dr. Williams, that a high and dry was better than a moist climate.

Dr. Leared had arrived at the conclusion, from personal experience, that climatic laws with reference to phthisis were empirical, and quoted Iceland as a country in which phthisis is unknown, but where the houses have no ventilation; and Palestine, part of which is below the level of the sea. He asked the author how, during life, the particular variety of phthisis could be accurately determined?

Mr. Charles Brooke remarked that there were two distinct climates in Natal, the contrast between the coast-line, in which the rainfall was enormous, and the plateau, being very striking.

Dr. C. J. B. Williams replied to so much of Dr. Wilson Fox's criticisms as referred to the inflammatory, catarrhal, and septic varieties, and remarked that by the inflammatory type were meant those cases that commenced in a distinctly acute attack, whether pneumonic, pleuritic, or pleuro-pneumonic, and subsequently drifted into phthisis. He believed that Madeira was particularly suited to cases of phthisis aggravated by frequent catarrhs; that though statistics on this and on all other medical subjects ought to be received with caution, he could point out many cases benefited by residence in particular places.

Dr. C. Theodore Williams expressed his obligations to the Fellows of the Society for the favorable way in which his paper had been received, and, in reply to Dr. Wilson Fox, stated that the cases now before the Society could not fairly or properly be classed or compared with the thousand cases brought

forward last year. In the former the terms "improved," "stationary," "worse," etc., applied to the condition of the patients after a residence abroad of one or more winters; whereas, in the latter, the result was recorded at the end of the entire system of treatment, which averaged about eight years for each case. The statistics showed plainly that life was prolonged by residence abroad, though to a small extent, the average for each patient being $2\frac{1}{2}$ winters. He had also proved in a former paper that cases of the inflammatory type had a longer average duration than other varieties of the disease. In reply to Dr. Hermann Weber the speaker remarked that his (Dr. Williams's) experience as to septic and inflammatory varieties had been gleaned in the out-patient department of the Brompton Hospital, from a close study of the predisposing and exciting causes of the disease. Dr. Williams replied briefly to the queries put by other speakers, and remarked in conclusion that, without continuous care and labor for many years on the part of Dr. Williams, his father, the compilation of these statistics would have been impossible.

ART. 126.—*Climate in its Relations to Consumption.*

By MANNING SIMMONS, M.D.

(*American Journal of the Medical Sciences*, January.)

In summing up the result of his observations, Dr. Simmons makes the following deductions:—

1. That phthisis occurs in every zone, and that its origin is not rendered impossible by any conditions of climate of which we have any knowledge.
2. That the disease, contrary to a very generally received opinion, is not more frequent in cold regions, and that a great degree of cold does not seem to favor its production.
3. That the same remark may be made in relation to heat.
4. That of all the influences which are favorable to its development and progress, we must recognize moisture, especially combined with heat.
5. That great variability in the qualities of heat, cold, and moisture are, however, to be recognized as most injurious.
6. That the most inimical influence to the origin and development of the disease is that exercised by the climatic conditions and habits belonging to extreme altitudes.
7. That consumption is, as a general rule, more frequently met with on seashores, and diminishes, to a certain extent, in proportion to the distance from these localities.

ART. 127.—*On a New Method of Nourishing Patients per Anum.*

By W. O. LEUBE, M.D., of Erlangen.

(*Deutsches Archiv für klinische Medicin*, May, 1872.)

"In the course of recent investigations on the nourishment of patients per anum, I composed for this purpose an injection-mass, which differs considerably in quality from ordinary nutrient clysters. This I have used for four months in my investigations on nutrition, both at the bedside and on animals. I have learnt that this new method of nutrition is not only valuable in clinical practice, but also gives results in physiological investigations. With the object of introducing into the large intestine nutritive material resembling its ordinary contents, and of establishing, as far as possible, natural conditions in this part of the alimentary canal by artificially produced digestion, I have endeavored to transfer to the large intestine a part of the digestive processes which normally take place in the small intestine. This object has, I believe, been attained to a great extent by a large use of pancreatic substance in the composition of the nutritive clysters. It was thought that the substance of this gland, which takes so great and so active a part in the process of digestion, would, when brought

into contact in the large intestine with substances capable of being digested, and when kept there at a constant temperature, develop its full digestive power. This supposition has been completely confirmed by results.

"The injection-mass is prepared in the following manner: From 90 to 100 grammes of the pancreas of the pig or ox are carefully deprived of fat, and finely minced. Then from 150 to 300 grammes of beef are minced and grated. Both substances are then rubbed down in a mortar with some warm water, in order to form a thick soup, which is then taken up into a clyster-syringe, furnished with a wide opening. If one wishes to submit, at the same time, fat to digestion, from 25 to 50 grammes of this substance may be added. Starch likewise may be added. A purgative clyster is to be administered one hour before this injection.

"The following are the general results testifying to the nutritive value of pancreatic clysters, which have been obtained from my physiological investigations, made almost exclusively on dogs:—

"1. The fecal mass which is passed after the injection of flesh and pancreatic substance, and after the injection-mass has remained for a long time in the large intestine, in almost all instances does not differ from ordinary feces either in appearance, smell, or consistence, and usually does not show any other signs of the presence of muscular fibre.

"2. The proportion of albuminous material is not diminished in an animal when the greater part of the albuminous food has been removed and replaced by anal injections of pancreatic substance.

"3. An animal, after it has been deprived for a time of albuminous food, on the day that it is again nourished with albuminous material in the form of anal injections of flesh and pancreatic substance, excretes more than on the previous day of albuminous material, corresponding to the albuminous contents of the nutriment injected per anum.

"4. Fat also in large quantities may be digested in this manner, on mixing it with pancreatic substance.

"5. Starch, when added to the injection-mass, is converted into sugar. This change probably may also be effected, in a normal manner, through the action of the mucous membrane of the large intestine.

"The therapeutical action of the above-described method of nutrition was proved to me in two cases in which the clysters were used for a long period. In one of these cases there was carcinoma of the upper part of the digestive canal, and in the other gastric ulceration caused by the patient having swallowed tincture of iodine. In the latter case, in consequence of persistent vomiting of ichorous material, no kind of nourishment could be administered through the mouth; still the patient, after the first administration of the clysters, containing flesh, fat, and pancreatic substance, remained relatively well.

"The following is a *résumé* of my experiences by the bedside of this method of nutrition:—

"1. The injected-mass, when it consists of nothing more than meat and pancreatic substance, never causes any diarrhoea, but, on the other hand, generally remains in the large intestine from twelve to thirty-six hours without giving rise to a stool.

"2. The patient experiences no disagreeable sensations after the injection, but rather a feeling of ease in the abdomen. In every case I made out that the pulse became fuller, that there was an improvement in the general condition and spirits of the patient.

"3. The clysters are not well borne at first; the less digested portion of the injected-mass being returned.

"4. The above-described injection-mass is superior to other substances recommended for rectal injections through its efficiency and the readiness with which it may be made."

ART. 128.—On *Hydramyl* as a General Anæsthetic.

By BENJAMIN W. RICHARDSON, M.D., F.R.S.

(Medical Times and Gazette, October 21.)

In the course of the present year (1871) Dr. Richardson has made a new investigation of the amyl hydride as an anæsthetic. He was led to this new, or rather renewed, research by some observations on the effect of the compound anæsthetic ether, when it was being used in the form of spray. This compound is a mixture of amyl hydride and rectified ether. The facts Dr. Richardson observed in using it for producing local anæsthesia were, that when it was applied for operations on the nose and mouth the patients often passed into a temporary general insensibility whenever the operation was prolonged. In an operation for cleft palate in a youth, Mr. Christopher Heath being the operator, this general anæsthesia was twice fully developed during the operation. In a case where a small but tedious operation was carried out for removing a piece of dead alveolus, the same event occurred, and even in two cases of simple extraction of teeth it was repeated. The sleep in all these cases was so insensibly induced, was so gentle, so deep, and yet so temporary, it did not fail to attract Dr. Richardson's attention; and as it was clear the insensibility was due to the inhalation either of the vapor of the hydride or of the ether, the author began a series of inquiries as to the part played by the hydride. To amyl hydride, for the sake of brevity, the name of *hydramyl* has been given. The fluid has a specific gravity of .625, and boils at 86° Fahr. (30° Cent.). It is nearly inodorous. When breathed it creates no irritation. On June 6th Dr. Richardson administered *hydramyl* for the first time for a short operation—viz., the extraction of a firm molar tooth from the lower jaw, Mr. Peter Matthews being the operator. The patient was a woman thirty years of age. Two fluidrachms of the *hydramyl* were poured into a small vulcanite inhaler, and, being given to the patient, she was asked to take a few deep inspirations. She carried out the instructions readily; and at the end of twenty seconds, as there was distinct evidence of an effect, Dr. Richardson removed the inhaler, and asked her to open her mouth. She complied, and Mr. Matthews immediately extracted the tooth. The whole proceeding was from twenty-five to thirty seconds. Within the minute the patient had recovered, and was talking consciously. She said immediately after she commenced to inhale she felt as if she were passing into a natural sleep. She remembered being told to open her mouth, and said she obeyed "as well as she could," but she could recall nothing more relating to the operation; she felt nothing whatever of the extraction. In recovering she had neither vomiting nor nausea, although she had breakfasted a few minutes before; in brief, her recovery was as perfect as it was rapid.

The character of the anæsthetic sleep itself was most satisfactory. It was induced without a movement of any kind; the face retained its natural color and expression; the pulse underwent no change whatever.

Here, therefore, there was insensibility to pain before the actual abolition of consciousness.

Dr. Richardson next administered the vapor of *hydramyl* on June 19 and 24 to three patients for the extraction of teeth, and in both cases with success; but he found a little difficulty, owing to the higher temperature of the air that then prevailed, in retaining the fluid in the inhaler, its lightness and low boiling-point causing it to evaporate with too great rapidity—in fact, a few breathings of the patient emptied the inhaler; he therefore proceeded to an endeavor to meet this difficulty by slightly weighting the fluid with a heavier body, but one having still a vapor density nearly the same, and a low boiling-point.

PART II.—SURGERY.

SECT. I.—GENERAL QUESTIONS IN SURGERY.

ART. 129.—*On the Surgical Treatment of Aneurism.*

By TIMOTHY HOLMES, M.A., F.R.C.S., Professor of Surgery and Pathology to the Royal College of Surgeons.

The main propositions which Mr. Holmes hopes to establish in the lectures now in course of delivery at the College of Surgeons are as follows:—

1. That aneurisms, of whatever form and however near the heart they may be, ought not to be regarded as incurable, but should be made the objects of definite methodical treatment, internal or external.

2. That there is definite proof, from pathological anatomy and from surgical experience, of the curative influence of Brasdor's operation in innominate aneurism, and of its beneficial effects in some cases of aortic aneurism.

3. That arteries may be successfully tied and obliterated without their continuity being interrupted; and that this modification of the ligature, whilst affording much security against secondary hemorrhage, and thus much diminishing the danger of the operation in general, may very probably in future enable surgeons to deal successfully with cases in which it may be necessary to tie the first part of the subclavian (whether on the distal or proximal side of an aneurism) or the innominate artery.

4. That galvano-puncture may be used with at any rate temporary benefit in thoracic aneurism; that its use is not so dangerous as to render further trials of it inexpedient: and that there is good hope that the method may be so far perfected as to make it a safe and regular plan for the treatment of thoracic, subclavian, and other forms of aneurism.

5. That many cases, such as those in which ligature of the artery near to the heart has been resorted to for the cure of subclavian and subclavio-axillary aneurism, may be made amenable to improved methods of pressure.

6. That aneurismal tumors situated even as high as the lower part of the abdominal aorta, those of the mesenteric and other branches of the aorta, and of the iliac arteries, may be treated with success by rapid coagulation of blood under pressure; but that this method is a dangerous one, and should not be used until internal treatment has failed.

7. That there are cases of abdominal aneurism in which Mr. Syme's suggestion of reviving the old operation is worthy of further trial.

ART. 130.—*On Precocious Erysipelas.*

By M. VERNEUIL.

(*Medical Times and Gazette*, May 11.)

At a meeting of the Société de Chirurgie on April 24, M. Verneuil introduced the subject of "The Causes and Mechanism of Precocious Erysipelas." He observed that numerous had been the discussions on the causes of erysipelas; for some, even at the present day, it is an exanthem, and for others a primarily local disease. According to some it may arise spontaneously, while others deny that it ever can do so—these last maintaining, and in M. Verneuil's opinion justly, that it has always been preceded by a prior accident or by a traumatism. He does not enter into the question of contagion, merely stating that there is

a variety of erysipelas in which the patient gives himself the disease by a kind of auto-inoculation. This variety of traumatic erysipelas is marked by its precocity—that is, by its following the traumatism very speedily, sometimes coming on the same evening, or the next day after an operation. This is an exceedingly important characteristic, quite adverse to the idea of contagion, which could not operate so rapidly. When erysipelas supervenes after the removal of the tumors, operations, etc., it does so about the fifth or sixth day, and in these cases it is to be observed that incisions have been made in healthy tissues. On the other hand, precocious erysipelas appears after small operations performed on parts in a state of suppuration—*e.g.*, after exploration of a bony fistula, extraction of a splinter, or making a counter opening for drainage. M. Verneuil has even seen a patient who had erysipelas each time his fistula was explored. The removal of the most recent crust covering a wound may excite it.

"In all these cases of precocious erysipelas there is, on the one hand, a traumatism, and on the other a centre of suppuration, the one dependent upon the surgeon, the other upon the patient. There takes place here, in fact, something analogous to inoculation; for it is just as if the surgeon took pus on his lancet from the patient in order to inoculate him with it—for we open largely a series of lymphatic vessels in a place close to another which is yielding pus or septic matter. Absorption takes place, and there is introduced erysipelas or angioleucitis, or rather both the one and the other. The more I see, the more I am persuaded that erysipelas and angioleucitis are in nowise different, there being the same commencement with an enormous increase of caloric, the same fever, and the same course. But I only mention this by the way, drawing from it the practical conclusion that this septic erysipelas can be prevented. Holding the conviction which I have just explained, I have pursued the practice of cauterizing or touching with tincture of iodine all incisions which I practise in suppurating lesions; and this is a precaution, to the efficacy of which I do not hesitate to attribute a great value."

M. Desprès had long held and published the same opinions, believing that erysipelas is not contagious, and that it is really an affection of the lymphatics. As to its contagion, no proof whatever has been advanced; for it will not suffice to say that it is so because patients in the vicinity of each other contract it. In this way menstruation itself might be said to be so, for many women have this come on earlier when they enter a hospital where other women are menstruating. When the lymphatic vessels have been opened, we may have sometimes angioleucitis, and at others erysipelas, or both at the same time.—M. Chassaignac observed that angioleucitis and erysipelas are entirely distinct. The former is a phlegmasia of the subepidermic network, giving rise to red traces, the network being separated by lozenges of healthy skin. There are also the engorged glands, in which the inflamed vessels terminate. In erysipelas we have a uniform color, with festooned edges, but without regular lines. It may commence by the hand, mount up to the arm, and redescend to the hand, which is not the case with angioleucitis. In angioleucitis there are never phlyctenae, which are present in most cases of erysipelas. In erysipelas there is a serious general condition, while in angioleucitis the patients sometimes clamor for food. Still, it is possible that the two affections may coexist. M. Chassaignac believes in spontaneous erysipelas, and refers to a case in which the disease has attacked the face in three successive years. He also believes that it may be propagated by contagion.—M. Blot believes in the distinction between angioleucitis and erysipelas, and could not agree with M. Verneuil that the latter is always preceded by a lesion of the mucous membrane or skin. He referred to the case of an infant, kept most scrupulously clean, in whom this appeared in the back, where no lesion whatever could be discovered. In spontaneous erysipelas of the face, the eruption on the lips is preceded by general symptoms for three days—a condition very analogous to that of eruptive fevers. He is much disposed to believe the same thing takes place in traumatic erysipelas.—M. Le Fort, while inclining to M. Desprès's belief in the identity of erysipelas and angioleucitis, believes that the question of contagion must be answered in the affirmative.—M. Verneuil, in reply to M.

Blot, observed that the initial lesion, whence erysipelas springs, may be a mere microscopic wound. In one of his own cases a patient had what seemed to be a spontaneous erysipelas of the face until it was recollected that the evening before he had epistaxis, which of course implies a lesion of a vessel. The initial lesion may not always be detectible, but since this has been more sought for, negative facts have become more and more rare. In 999 times out of 1000 the erysipelas can be referred to such lesion.—In M. Trélat's opinion, erysipelas must be regarded as an infectious disease, of which angioleucitis must be looked upon as constituting one of the pathological elements.

ART. 131.—On Epidermic Transplantations.¹

By M. L. REVERDIN.

(*Gazette Médicale de Paris*, No. 1, 1872.)

"Two years ago I presented to the Société de Chirurgie a patient upon whom I have practised the following experiment. I applied over a granulating wound a small piece of the superficial parts of the integument between two and three millimetres square, which had been removed by means of a lancet; this flap became adherent, and around it was formed an islet of cicatrix. I have repeated this experiment on a great number of wounds, and this proceeding, which is susceptible of various practical applications, has been adopted by several French and continental surgeons. I have recently experimented upon animals and studied the histological process, and the results which have been obtained form the subject of this communication.

"I should first mention that the grafts include epidermis and a layer more or less thick of the dermis; in practice it is almost impossible to do otherwise.

"My experiments have proved to me that the grafts may be taken either from different individuals of the same species or from individuals of different species. On the white man I have succeeded in implanting pieces taken from other white men, from negroes, and from rabbits. On the rabbit I have successfully practised with grafts taken from other rabbits, from men and dogs; on the sheep I have implanted pieces taken from man.

"When the transplantation is successful, the graft becomes adherent at the end of twenty-four hours (if not it may be retained in its place and still be made to take); it becomes swollen and wrinkled; towards the third day a smooth red circle commences to form around the graft, which is then depressed below the level of the granulations; on the following day the circle is of a pearly-gray color and gradually becomes white; the areola then advances and the subsequent appearances resemble those occurring in marginal cicatrization.

"The islets thus formed are pretty regularly circular when the graft is placed at some distance from the borders of the ulcer; if it is near to this border or to another graft, the development of the epidermis is more rapid at the adjacent sides of the two cicatrices, the islets elongate, the marginal cicatrix also shoots out a process and, at a given moment cicatricial offshoots, sometimes very long and narrow, are formed at these points.

"With regard to the grafts taken from pigmented skin (that of the negro and of a black cat), I have observed the piece gradually lose its color and become quite white; the islets formed around these do not present any special coloration.

"The following are the results of microscopical examination (the pieces taken from man and the rabbit were hardened in a solution of chromic acid, and the sections colored in carmine or picrocarminate of ammonia; I have also studied fresh sections):—

"In a section of a graft at the end of forty-eight hours one sees the epidermic cells of the piece in process of desquamation and their nuclei presenting appearances of vesicular transformation; at the borders of the graft the epi-

¹ Presented by M. Claude Bernard to the *Académie des Sciences*.

dermis is prolonged for a short distance over the granulations; besides this it has passed between the dermis and the surface of the ulcer, and is prolonged more or less deeply. If the section, instead of being made at a certain distance from the border of the graft, falls just upon this border, the two enveloping portions are seen to run together and form one layer. The dermis therefore is inclosed between two layers of epidermis. This fact indicates that the graft is in some way fixed over its whole extent by the deep epidermic extension of which I have spoken.

"It is by this means that the graft is first united, for, on the one hand, these epidermic extensions are in intimate connection with the embryonic tissue of the wound, and, on the other hand, the dermis does not present any modification or appearance of soldering.

"The epidermis then extends gradually along the surface of the wound, and the following appearances may be observed in a graft after six days: similar desquamation, a similar vesicular condition, and the two inclosing layers are well developed. At a later period a layer of epidermis of irregular thickness spreads, and from the deep surface of the graft fresh shoots are given off, sometimes very large and very irregular, which penetrate into the embryonic tissue; at the bottom of these shoots are very often found epidermic nests (globes épidermiques) resembling those of canceroid. At the limits of the islet the epidermic layer terminates in the form of a fan.

"In studying the constitution of this fan-shaped termination it may be observed to consist of voluminous epidermic cells with smooth walls, spherical in form, and inclosing each a large round nucleus; they are colored by carmine, and, in their form, size, and their round nucleus they differ from older epidermis, and in their coloration and single nucleus from embryonic cells. Some of these large epidermic cells with round nuclei may be found in the deep layers of older epidermis in the islet. The fan-shaped extension by becoming flattened into stratified layers may probably assist the depression of the islet below the surface of the granulations.

"I have never seen the epidermic cells in process of proliferation or containing several nuclei, nor anything on the other hand indicating their formation in a blastema.

"With regard to the dermis, this, at the end of six days, is found to have been transformed; it is furrowed by embryonic vessels in continuity with those of the granulations; the elements, with the exception of the elastic fibres, are replaced by elements resembling those of granulations; it has returned almost completely to the embryonic condition.

"From this histological examination it results:—

"1. That the adhesion of the grafts is produced in the first place by epidermis and only secondarily by dermis.

"2. That the epidermis acts by contact (catabiotic action) in exciting the contiguous embryonic surfaces to become transformed into epidermis."

ART. 132.—*On Cutaneous Grafts.*¹

By M. OLLIER.

(*Gazette Hebdomadaire*, No. 13, 1872.)

"In 1869 M. Reverdin demonstrated that small pieces of epidermis from two to three millimetres square, when transported to closing wounds, were susceptible of being ingrafted on the surface of the granulations and becoming centres of epithelial formation, which would assist in hastening the cicatrization of the wound.

"The facts which I have the honor to submit to the Academy demonstrate that not only are small pieces of epidermis capable of being transplanted, but also large cutaneous flaps formed not only of the superficial layer of the dermis, but of the whole thickness of the integument.

¹ Communicated by M. Claude Bernard to the *Académie des Sciences*.

"Instead of sowing small fragments of epidermis, I perform veritable cutaneous transplantations. I do not confine myself to sowing over the granulations small epidermic islets, I cover with large flaps several centimetres square a more or less considerable extent of the surface of the wound, the cicatrization of which I wish to hasten. I do not endeavor only thus to hasten the natural epidermization of the granulations, I close the wound by a borrowed layer of skin, which, when once ingrafted, forms a limiting membrane quite different from ordinary cicatrices.

"When one transplants small epidermic or dermo-epidermic pieces, one may hasten undoubtedly to a certain extent cicatrization of the wounds, but cannot obtain a cicatrix differing from that which is produced naturally. The fundamental processes and even the structure are the same; and it has the same properties as cicatricial tissue.

"The epidermic pellicle, the formation of which has been hastened by the multiplication of the centres of epidermization, has the same characters as the superficial layer of ordinary cicatrices. It is so unstable that it may be destroyed under the influence of the least irritation. It is smooth, shining, and reveals through its transparency the violet-colored tissue which constitutes the fundamental part of the cicatrix. At the periphery of chronic ulcers in the lower limbs it is transformed into a more or less thick epidermic layer, which, however, possesses no stability, and which ought to be considered as a pathological product. Under the epidermic grafts the proper tissue of the cicatrix comports itself as in cases where it is formed naturally; it has the same contractility, and consequently, the same inconveniences from a surgical point of view.

"By transplanting large cutaneous flaps, and by multiplying these, I can cover at a single sitting the greatest extent of the surface of a wound, and the cure then takes place by a process quite different to that carried on in the ingrafting as hitherto practised.

"The pieces of skin may be taken either from the patient himself, or from other individuals. I have taken most of my grafts from limbs amputated on account of accident occurring to men otherwise healthy.

"In those cases in which I have been obliged to take the pieces of skin from the patient himself, I have, in order to do away with the pain of the operation, profited from an experiment, the results of which I communicated to the Academy ten years ago. This experiment proved the possibility of transplanting tissues which had been subjected to a low temperature. At that period I demonstrated that pieces of periosteum first frozen and then transplanted under the skin of another animal, could not only regain life, but also produce osseous tissue. Before practising cutaneous transplantation I apply to the skin a freezing mixture composed of ice and salt. When the skin is frozen, that is to say, when it is white, bloodless, and insensible, I cut out pieces comprising the whole of the dermis, which, when transplanted on the surface of a wound, become perfectly ingrafted."

ART. 133.—*On Wadding Dressings.*

By M. ALPHONSE GUÉRIN.

(*Archives Générales de Médecine*, December, 1871; *Gazette Hebdomadaire*, No. 46, 1871.)

The dressing devised by M. Alphonse Guérin does not consist simply in dressing wounds with cotton-wool: this agent indeed plays an active part by means of which the shortened or wounded limb benefits from the application of several grand surgical methods, each of which produces excellent results. The cotton-wool is employed with the aim of filtering the air which comes in contact with the wound; it ought then to be applied in sufficient quantity for realizing the properties of a filter, and at the same time ought to be sufficiently abundant to exert elastic compression upon the covered parts.

Filtration of air and elastic compression are the objects to be attained by the dressings of cotton-wool.

The following is the manner in which this kind of dressing is practised: we will suppose that the surgeon has to dress an amputation-wound of the thigh made by the circular method. Hemorrhage having been arrested as much as possible by the application of ligatures, the wound is washed, at first with warm water and afterwards with a mixture of water and camphorated alcohol, or with some antiseptic fluid. The limb is then thoroughly cleansed and carefully wiped. The ligatures with the exception of that on the principal artery are cut short. The surgeon then proceeds to the cotton-wool dressing.

The wool which is about to be used ought to be quite fresh from the hands of the workman. In order to obtain it free from all morbid impurities, M. Alphonse Guérin opens the packet himself, which has been previously kept in a special place in the operating theatre.

The extremity of the stump is confided to an assistant, who keeps it stretched by compressing between the thumb and index finger each extremity of the horizontal diameter of the wound. A second assistant holds the limb between his two hands, so as to keep the flaps together. The surgeon then disposes over the bottom of the wound in small successive layers fragments of the cotton-wool, which adhere immediately to the moist tissues with which they are brought in contact. No point is left exposed. The wound is gradually filled with tightly compressed wool. The surgeon then takes large layers of wool, the centres of which cover the extremity of the stump, other layers are rolled round the limb as far as the fold of the groin, and then others again are applied round the pelvis. Each layer must be applied as exactly as possible, and finally when the whole limb seems to be about three times its normal size, and is packed like a very precious object which would not bear the slightest shaking, the surgeon commences to bandage.

This application should be made as if for the purpose of elastic compression. The constriction should be progressive and be made as energetically as possible towards the end of the dressing. Although much force has been exerted in applying this bandage, one will be astonished to find that it is not too tight. This constriction and also the application of the cotton-wool as far as the trunk, where it is maintained by a bandage as tightly applied, are details of the greatest importance for obtaining good results.

"In dressing an amputation wound of the arm, the neck and chest ought to be enveloped in wool, in order to present a very powerful compression in the axillary and infra-clavicular regions. In the leg and forearm the cotton-wool dressing should be applied with care as high as the root of the limb.

"In flap amputations the wool is to be applied between the lips of the wound, as in the wounds made by the circular method. In resections the space around the ends of the bones is to be filled up in the same way, and the limb is then to be maintained in a gutter formed of two thick layers of wadding.

"Finally, in every case, the application always consists in a very exact and elaborate enveloping, maintained by a firmly compressing bandage. It will be seen that with this kind of dressing there is no attempt at immediate union. M. Guérin, however, encouraged by the results which he has already obtained, proposes, on an early opportunity, to attempt to obtain, without applying wool to the inner surfaces of the flaps, that kind of union which has always been considered so desirable."

After the thigh has been dressed, the patient is carried to his bed, where the limb is placed in an almost horizontal position. The surgeon when applying the dressing should not forget the position in which the stump will afterwards be placed; he ought, therefore, to take great care that the limb be held in the axis of the reclined trunk, so that the bandage will not become uneven, and cause too much constriction on certain parts.

The first phenomenon to be remarked by the patient is the absence of all pain. When carried to and placed on his bed, he does not experience the slightest painful sensation, even when the influence of chloroform has passed off.

"If, shortly after the operation, the patient should complain, it is only of a very tolerable pain. Sometimes it is a scalding sensation, caused by the appli-

cation to the wound of an insufficiently diluted wash of camphorated alcohol, or, perhaps, the uneasiness may be due to agglutination of the hairs to the dressing and consequent dragging. In one case pain was due to the inclusion of a small nerve in a ligature. A precise analysis of the painful sensation will generally enable the surgeon to discover its origin. In cases where the sensibility of the stump indicates that the dressing is defective, *this ought to be immediately rectified*. If the patient suffers, it is because the compression is irregular, or because the air passes in at some point, and arrives directly at the wound. In cases of this kind, the secretions from the wound generally flow away at such points. As a rule, the dressing ought to be carefully inspected every day. The dressing, unless very defective, need not be entirely renewed. Fresh layers of wool should be applied at the defective points, and then be covered by a bandage applied firmly as before."

The imperfection of the dressing is not indicated only by painful sensations; elevation of temperature, and a high pulse at almost the same time attract attention. During the first days of treatment, the discharge from the wound forms, with the layers of wadding, a sticky mass, which agglutinates the skin of the limb to the enveloping layer. This is a very desirable condition, for when this agglutination is complete over the whole periphery of the limb, only filtered air can reach the wound.

This agglutination, therefore, ought to be favored by all possible means. For this purpose it is necessary to forbid all movements on the part of the patient. In a case of amputation of the thigh the patient ought not to sit up in bed unless for indispensable requirements; and here it is necessary to remember the precaution which ought to be taken in applying the bandages at the first dressing, so as not to fix the limb in too elevated a position. If this is not done, by reason of the compression, the wadding becomes uneven, the limb sinks in virtue of its own weight, the bandage is no longer exactly applied, and air may pass under the dressing at the fold of the groin; if the patient be restless the same may occur behind at the fold of the buttocks. If, on the other hand, the limb be dressed whilst it is in the position which it will take in the habitual decubitus of the patient, that is to say, in a position almost horizontal, all these inconveniences will be avoided, and moreover this position is the best to lay the stump in after amputation of the thigh, in order to guard against projection of the femur.

The general condition of the patient whose wound has been dressed in this manner usually remains excellent; one will observe twenty-four or thirty-six hours after the operation symptoms of traumatic fever, which generally last for two or three days. So long as the patient does not suffer the dressing may be allowed to remain, but it is necessary, particularly during the early stage of the treatment, to make sure that the compression is well maintained, and, if it is not, and pus flows externally, to add fresh layers of wool and another compressing bandage. In addition the dressing should be sprinkled with carbolic acid or camphorated alcohol. Finally, when the dressing is renewed, the patient ought to be carried out of his ward—a precaution to which M. Guérin attaches very great importance.

ART. 134.—*The Science and Art of Healing Wounds.*¹

By BENJAMIN W. RICHARDSON, M.D., F.R.S.

(*The Lancet*, February 17.)

After alluding to the great diversity of opinion existing in the profession on the subject of treating wounded surfaces, Dr. Richardson illustrated from clinical observation the results of healing, in extreme cases, by the first intention, and then he put the inquiry—Why, if in one case of the extreme kind named there could be cure by the first intention, there should not be such cure in the

¹ Read at a Meeting of the Medical Society of London, January 29th.

majority of cases—why, in short, should success by this method of cure be the exception instead of the rule? Two sets of causes stood in the way—one set remediable, the other irremediable. The remediable obstacles to recovery by the first intention were—want of care in bringing divided surfaces into perfect apposition; the too free use of water in dressing; the too prolonged exposure of wounds to the air; too much manipulation of the surface of the wound; the leaving of long ligatures within the wound; the imperfect closure of wounds from the air; the too hasty removal of dressings; and, lastly and most important of all, error of judgment on the part of the dresser in respect to the question whether there be, in the case to be treated, sufficient continuity of surface to warrant the attempt to heal by the first intention. The irremediable causes preventing healing by the first intention were—nervous lesions, influencing the vascular supply of the injured part; the accidental introduction into the wound of decomposing or other foreign matter, or the generation of organic poisonous product within the body. These cases lie apart from the science and art of dressing wounds, and may be left for a special and future discussion. For the promotion of healing by the first intention, the author contended that the dressing employed should have four distinct qualities: it should be collodial, elastic, impermeable to air, and styptic. Healing by the second intention formed the next part of Dr. Richardson's communication. Here again the rules named in relation to healing by the first intention were considered, and it was maintained that the same collodial dressing was as affective in curing by the secondary as by the primary process, the difference of application being that the whole of the exposed surface was to be treated with the collodial fluid. After giving a series of cases of rapid healing by the second intention, cases in some of which bone had been exposed, and even a joint laid open, and after touching briefly on the addition of iodine to collodial solution in some particular cases, the author placed before the Society a summary of his argument in a series of short propositions, and concluded by insisting that medical men live to cure all they can, and to try to cure everything until they succeed, through whatever tribulation they may pass in the labor.

ART. 135.—*On the Antiseptic Method in Surgery.*

By Dr. PAUL GUTERBOCK, of Berlin.

(*Archiv für klinische Chirurgie*, xiii. 2, 1872; *Schmidt's Jahrbücher*, No. 2, 1872.)

The author, guided by his own recent experience, discusses fully the advantages and disadvantages of Lister's dressing. To the argument used by Professor Lister against his opponents that his method has never been closely followed by them, it is a sufficient answer that he himself, since his first contribution on this method, has modified it in many different ways. Of chief consequence in this method is always the local use of carbolic acid, which produces cauterization following immediately on the injury, and continued for some time. This is proved by the early contributions of Professor Lister on this subject. For this reason German surgeons have not practised prophylactic washing out of wounds with irritant fluids, and have latterly used carbolic acid in diluted forms. Even by diluting it, and by using lac plaster, the caustic action of carbolic acid is not quite removed. Likewise, when one carries out a plan seldom resorted to by Professor Lister, and places pieces of lint, dipped in olive oil, between the wound and the carbolic paste, the caustic action of the carbolic acid cannot be altogether avoided, as this agent may flow from the paste, and become mixed with the olive oil. In the more recent modifications of Lister's process the caustic action is not so intense as it would be if applied according to the early methods. In all, however, one circumstance has to be considered, namely, that after the first cauterization with the acid the tissue-detritus thus produced forms a crust, which ought not to be removed. The eschar formed by carbolic acid does not extend very deeply, and the cauterization with this acid of wounds which have been attacked by hospital gangrene or by diphtheria,

has the disadvantage that after it the surgeon cannot determine with precision the extent of the disease, since the pulpy surface of a wound in a case of hospital gangrene very much resembles an eschar produced by the action of carbolic acid. The differential diagnosis can only be obtained by constant watching, by the general condition of the patient, and by other phenomena presented in the parts about the wound. Wounds treated with carbolic acid have but a slight tendency to heal, as has been acknowledged by Professor Lister himself, who has, in order at last to favor cicatrization, substituted for the antiseptic dressing some other application. This action of the antiseptic method can Dr. Güterbock confirm by his own experience. As after cauterization with carbolic acid the eschar is but slowly detached, there is but a slight tendency to inflammatory reaction, and the wound is tardy in healing. The carbolic acid does not in every case give rise to the formation of eschars; when such are not present there is superficial mortification of the tissues. This condition may be conjectured when granulations secrete but little, and when there is a tendency in the capillaries to bleed, and no progress towards healing. In a case of this kind, reported by Dr. Güterbock, all these symptoms disappeared as soon as chlorate of potash had been substituted for the carbolic acid in the dressings.

This tendency to hemorrhages was observed by Dr. Güterbock in wounds treated according to Lister's method, before these had reached the stage of granulation. A special objection to Lister's method is its hindrance to healing by primary intention, which may be caused by the use of a 1 to 30 solution.

After a prolonged application of carbolic acid, excoriations and eczema appear in the neighborhood of the wound, which lesions, although they have no influence on the course of the disease, are yet very obstinate. Dr. Güterbock, after an operation for pseudarthrosis, performed according to Dieffenbach's method, in which a solution of carbolic acid (1 to 20) was used, observed that eczema persisted for some twenty-four weeks after the healing of the wound. In one case erysipelas occurred as the result of excoriations of this kind. Such instances, however, are but seldom observed. All these results, which are referred to the caustic action of carbolic acid, present in but a small number of cases any contra-indication against the use of the agent, and in the majority do not interfere with the favorable progress of wounds. But the method does not perform all that Professor Lister praises it for. In most of the cases observed by Dr. Güterbock the carbolic acid treatment did not answer to the favorable reports made on it, and imparted no protection against hospital maladies.

To prove this assertion, Dr. Güterbock brings forward thirteen tabulated cases of compound fracture, which, in the course of eighteen months, had been treated according to Lister's method. None of these cases ended fatally; in three the wound was very small; in the remaining ten cases all those bad symptoms were presented which distinguish compound, in opposition to simple, fractures, and erysipelas and hospital gangrene occurred. Of these cases there were but few which presented, at the first, any certain indications for amputation, and such cases did not become more favorable under the influence of Prof. Lister's treatment. An actively favorable influence and a protective action against hospital diseases could not be attributed to Prof. Lister's plan of dressing in any one case.

Dr. Güterbock reports the following case, which, according to Lister, would be denoted as one of acute traumatic necrosis:—

A man, twenty-nine years, received the kick of a horse over the right shin-bone, which caused a wound about one inch in length in the inner surface of the leg, extending through the soft parts, and exposing the bone. On the day after the accident there was much swelling of the injured limb, and intense fever. Incisions were then made down to the bone, and the paste and oily solution of carbolic acid were then applied instead of the previously used simple dressing. The patient progressed favorably, and at the end of a month was discharged. No exfoliation of bone took place.

Dr. Güterbock would not attribute this favorable result of this case to Lister's method, as limited injury and exposure of long bones are often healed by other

plans of treatment, and here the antiseptic method was not properly or solely carried out.

Dr. Güterbock has not been able to convince himself of any striking advantage attending the antiseptic method in the opening and subsequent treatment of congestive abscesses. In his opinion, the favorable results obtained by Joseph in the Leipzig clinique are only seemingly opposed to this position, since in these cases no favorable influence upon the primary affection could be made out.

Relatively favorable results have been obtained by Dr. Güterbock in the treatment of wounds, and acute suppuration of joints and serous cavities. In four cases of affections of the knee-joint, he did not lose a single patient, and in all instances there was recovery with fair mobility of the limb. The same good results were obtained in two cases of suppuration of the mucous bursa over the olecranon, attended with high fever. Lesions of this kind, Dr. Güterbock allows, may be treated with success by the antiseptic method. He does not, however, inject carbolic acid into wounded joints. He has obtained similar good from the antiseptic treatment of injuries of tendinous sheaths, but has not succeeded with this method in cases of phlegmon and acute suppuration.

Dr. Güterbock has not found that the use of carbolic acid improves, as it has been stated to do by Prof. Lister and his followers, the sanitary condition of hospitals. Since the hygienic conditions of the Berlin hospital have been altered the results of treatment have been better, although Lister's method has been but seldom practised.

The statistical proofs brought forward by Prof. Lister with regard to the small number of fatal cases after amputation and resection do not prove the exclusive value of his method, since at the Berlin hospital, at a time when Prof. Lister's treatment was not heard of, just as good results were obtained as those placed to the credit of the antiseptic method. Differences in the results of treatment, such as those in the Glasgow Royal Infirmary and the hospital at Berlin, are quite independent of the antiseptic plan of treatment. It is difficult to answer even the question whether the number of such favorable cases has been much increased by the use of Prof. Lister's method.

As a positive result of his inquiries, Dr. Güterbock concludes that Prof. Lister's dressing is constantly followed by injurious results, chiefly due to the caustic action produced by every form of its application, whilst the advantages of the method are obtained only under quite favorable conditions, and with the concurrence of especially favorable circumstances, for which reason they, in themselves, are not to be undervalued. To this method is especially applicable the remark of Stromeyer, that many things seem to act as antiphlogistics that prevent the access of air and the fingers of the surgeon.

ART. 136.—*Sulphurous Acid Lotion in the Treatment of Contused Wounds.*

By JOHN BALFOUR, M.D.

(*Edinburgh Medical Journal*, November, 1871.)

Dr. Balfour states that an extended experience has given him great faith in this application. It gives almost instant relief from pain, controls and greatly restrains suppurative action, and where possible, secures primary union perhaps as efficiently as carbolic acid. The lotion is of the strength of one in twelve; a thin rag (the thinner the better) should be laid over the wound, and kept constantly wet for the first thirty-six to forty-eight hours. When cold becomes less agreeable, the lotion is used tepid, the rag being wetted every twelve hours and covered with gutta-percha. Where primary union is taking place, about the third or fourth day, a dressing of zinc ointment is to be substituted for the washing: this allows the skin to heal. When suppuration is established, a zinc lotion may be used after a week or ten days, and the cure wrought out on ordinary principles. Dr. Balfour records the following amongst other cases: S. B., a lad between eleven and twelve years of age, on the 8th of June, in company

with some other boys, was amusing himself with gunpowder; a "peeoge" (or devil) hung fire, and he poured some powder on it from the flask. This of course exploded, and tore open the metacarpal space between the thumb and forefinger of the right hand. The metacarpal bone of the thumb was fractured, and both wrists scorched. A mass of the short flexors of the thumb was forced out of the wound, contused, torn, and blackened. As this muscular substance was much injured and could not be returned without using undue force, a good deal of it was cut off, the wound was washed out with the sulphurous acid lotion, covered with a rag wet with the same, and the fracture was kept in position by tying the thumb to the forefinger. "Had a fair night's rest; the wrists (not complained of yesterday) now painful and beginning to vesicate; dressed with carbolic acid and oil. Everything went on well, the burns on the wrists healed kindly, suppuration was most moderate, cicatrization rapid and perfect." Dr. Balfour lately passed the boy into a public work, with a thumb very little, if at all, the worse for the accident.

ART. 137.—*Treatment of Carbuncle by means of the Hypodermic Syringe.*

(*Medical Press and Circular*, December 13, 1871.)

Carbuncles, according to the *Georgia Medical Companion*, are most safely, humanely, and more regularly treated as follows: Introduce the canula of a hypodermic syringe into the centre of the tumor, draw out the piston, and with it will come the pus, if any. The syringe is to be removed from the canula, and emptied, the canula left in, and the syringe replaced in the canula again, and the piston withdrawn, as before, as long as pus follows. When all the pus is out, withdraw the canula and apply on the tumor, externally, with a brush, the following: R Collodion, 3j; castor oil, gtt.xx; carbolic acid, gr. v; tannin, ʒj. Mix.

Several applications are to be made, one after the other, so that a good outer covering is obtained at once.

ART. 138.—*On the Local Treatment of Anthrax by Strapping.*

By GEORGE A. GLOAG, L.K.Q.C.P., Surgeon to the Bristol Dispensary.

(*British Medical Journal*, February 3.)

In illustration of the advantages to be derived in the treatment of anthrax by strapping, Mr. Gloag quotes some details of a case that was lately under his care, in which strapping was the only local treatment adopted. J. Davis, aged fifty-two, by occupation a shop-assistant, first came under Mr. Gloag's notice on November 29, 1871. He had been attending as an out-patient at the Bristol General Hospital for some days previously, but walking caused him so much pain that he was obliged to procure surgical attendance at his own home. He was suffering from a large anthrax on the back, its centre being situated near the inferior angle of the left scapula. The tumour presented a diameter of six inches; it was of a dusky red color, hard, and of a circular shape. A number of small openings appeared on the surface, through which a gray-colored substance could be discerned. The constitutional disturbance was considerable; he suffered great pain, and was unable to sleep. Mr. Gloag ordered him tonics and opiates internally, and applied the pressure-treatment by strapping, on the 30th November, and on each succeeding day, until the 23d December, when it became no longer necessary, all discharge having ceased. Each time the strapping was applied, a quantity of tenacious yellow matter was pressed out of the little openings on the surface. These openings had no tendency to coalesce, as is often the case, and no more integument was ultimately destroyed than a sixpence would cover.

The advantages of the pressure-treatment of anthrax, over incision or cauterization, are, that it is safer and more rapid; prevents to a great extent, the

destruction of integument; and is more agreeable to the patient. Mr. Gloag believes the action of strapping to be twofold; firstly, it acts like the pressure-treatment of orchitis, by emptying and supporting the vessels; and secondly, by pressing out the peculiar exudation, which closely resembles slough, but which it can hardly be, because it is circumscribed, and quite free from unpleasant smell. This mode of treatment, to be of use, must be fully carried out; the sides of the anthrax must be drawn together by broad strips of sticking-plaster, with all the force that the surgeon can exercise, or the plaster will bear. Nothing less is of any utility. The mode of strapping a large anthrax is to cut the plaster in strips about two feet long, one-half of each strip being about two inches wide, and the other about an inch and a half. These are applied in pairs, by making the broad ends adhere to the skin on opposite sides of the anthrax, in such a manner that, when the narrow ends of the plaster are joined together, they shall pass over the tumor, the narrow part of one strip of plaster meeting the edge of the broad part of the plaster of the opposite side, thereby giving the appearance as if one strip of plaster three inches and a half wide had been applied. About eight of these strips are to be thus put on, so that they shall present a stellate arrangement, with the centre corresponding to the apex of the tumor. The anthrax will require to be dressed every day; the strips of plaster are to be removed, and the part sponged with warm water, to remove any discharge that may have exuded from the small openings on its surface; after which Mr. Gloag has found it advantageous to rub the surrounding skin with a little lint dipped in turpentine, to remove any sticky matter that adheres to it from the plaster. The pain which the strapping causes at first is soon succeeded by a feeling of comfort and support.

ART. 139.—*Galvanic Treatment of Red-sores and Indolent Ulcers.*

By WILLIAM A. HAMMOND, M.D.

Dr. Hammond, of New York, recommends for indolent ulcers and bed-sores, the galvanic treatment as first suggested by Crussel, of St. Petersburg. He says: "During the last six years I have employed it to a great extent in the treatment of bed-sores caused by diseases of the spinal cord, and with scarcely a failure; indeed I may say, without any failure, except in two cases where deep sinuses had formed, which could not be reached by the apparatus. A thin silver plate—no thicker than a sheet of paper—is cut to the exact size and shape of the bed-sore; a zinc plate of about the same size is connected with the silver plate by fine silver or copper wire six or eight inches in length. The silver plate is then placed in immediate contact with the bed-sore, and the zinc plate on some part of the skin above, a piece of chamois-skin soaked in vinegar intervening. This must be kept moist, or there is little or no action of the battery. Within a few hours the effect is perceptible, and in a day or two the cure is complete in a great majority of cases. In a few instances a longer time is required. I have frequently seen bed-sores three or four inches in diameter, and half an inch deep, heal entirely over in forty-eight hours. Mr. Spencer Wells states that he has often witnessed large ulcers covered with granulations within twenty-four hours, and completely filled up and cicatrizations begun in forty-eight hours. During his recent visit to this country I informed him of my experience, and he reiterated his opinion that it was the best of all methods for treating ulcers of indolent character and bed-sores."

ART. 140.—*Three Cases of Traumatic Tetanus.*

By J. FAYRER, M.D.

(*Indian Medical Gazette*, February.)

Dr. J. Fayrer records three cases of traumatic tetanus; one resulting from lacerated wound of right great toe, the second from a wound of the left index finger, and the third from wound on dorsum of right foot. Cases one and

two recovered from well-marked symptoms of the disease after amputation of the wounded part in which the disease originated. In the third case, removal of the cicatrix was not successful, the disease progressed, and the patient died.

In two cases there could be no doubt, Dr. Fayrer says, that the origin of the disease was completely removed, for, as the wound was situated on the digitis, and those parts were amputated, the injured afferent nerves—viz., those which conveyed the evil influence to the nerve centres, were necessarily divided. The source of disturbance being removed, the symptoms subsided, and the patients recovered. Dr. Fayrer has, on a former occasion, recorded a similar case in which a favorable issue resulted, and those now noted tend to prove that if the part whence the irritation sets out, and which, if allowed to remain, excites that peculiar polar condition of the cord which results in the waste of nerve force, tetanus, be removed early, the perturbation, though great, is not necessarily permanent, and may subside.

Though no one would hesitate to amputate a finger or toe in such a case, most would hesitate to apply the same treatment in the case of a limb, until the symptoms of tetanic spasm became so severe as to leave no doubt as to the greater danger incurred from the disease: unfortunately it is then too late; the disease is thoroughly established, and amputation is as powerless to remove the results as any other remedy.

In so desperate a disease as traumatic tetanus, the most desperate remedies are justifiable, and Dr. Fayrer suggests the advantage of resorting to amputation, even of a leg, on the earliest invasion of the symptoms.

Amputation, the author is quite aware, has often been practised and with unfavorable results, but he is inclined to believe that it has not, as a general rule, been resorted to early enough to give it a fair chance of success.

No one would recommend amputation of the limb if the peccant nerve could be isolated and divided, as in the case of that leading from a finger or a toe.

In a wound of the leg or arm it is almost impossible to indicate the branch or trunk that is the conductor of mischief to the centre; and therefore to secure its division the whole limb must be removed.

The hydrate of chloral may have had something to say to the recovery in these cases, but Dr. Fayrer has not found it successful, except as euthanasia, in these cases.

ART. 141.—*On the General Diagnosis of the Syphilitic Chancre.*

By Dr. A. FOURNIER.

(*Union Médicale*, No. 57, 58, 59, 63, 1871; *Annales de Dermatologie et de Syphiligraphie*, No. 3, 1872.)

The following statements, which sum up a recent contribution from M. Fournier, add to this diagnosis several elements which every pathologist, anxious to keep up with the stream in science, and to maintain his science at the level of the hygienic and social questions which affect this subject, ought henceforth to take into serious consideration:—

This diagnosis is a problem which it is sometimes easy and at other times difficult to solve; but it is always a problem, for from its solution may be derived a most serious prognosis with regard both to therapeutical indications and to very important medico-legal conclusions.

The diagnosis of *nascent chancre*—that is, of chancre observed at its embryonic stage, is impossible. At this period there is nothing more than an erosion, which may resemble any possible form of erosion; it does not present a single character by which it may with certainty be diagnosed from a scratch, or from any slight injury of an *erosive* or *ulcerative* form; the chancre may be particularly confounded either with simple, traumatic, or inflammatory *erosion*, or with herpes.

There are but two signs which differentiate chancre from erosions, but these are demonstrative: *induration* and *adenopathy*. All other diagnostic elements have nothing fixed or constant.

1. In dealing with a chancre one may almost always find at its base a certain resistance or hardness. When slight, this constitutes an index; when well marked, it justifies the suspicion of a chancre.

2. The absence of glandular engorgement, at a period when the lesion is well declared, permits one to reject confidently the idea of a chancre. In the presence of a *glandular pleiad* it will be quite otherwise, as a chancre alone can excite a glandular reaction of this kind.

Whenever the lesion under examination has already been treated and cauterized, the surgeon in his diagnosis ought not to take the sub-chancrous induration into account; ordinary forms of erosion often become hard in a surprising manner, simulating the most marked syphilitic indurations, and deceiving on this point the most experienced surgeons.

The form of herpes which is susceptible of being confounded with chancre is not the vesicular herpes, nor the herpes with miliary erosions consecutive to the rupture of isolated vesicles; it is the confluent chronic or chancre form of herpes.

Three almost constant signs may serve as a basis for the differential diagnosis of chancre and herpes: 1st, the condition of the glands; 2d, induration; 3d, the circumferential tracing of the lesion.

1. *Condition of the Glands.*—With chancre there is constantly an indolent, hard, and persistent adenopathy. With herpes there is no glandular reaction, or, at the most, a slight sub-inflammatory tension of the glands.

2. *Induration.*—In chancre there is a constant, or almost constant, induration, varying in degree. In herpes the base of the sore is supple and not indurated.

3. *Circumferential Tracing of the Lesion.*—The contour of the chancre is represented either by a circle of a certain diameter, or by a more or less regular oval, or by some non-geometrical, irregular form. In herpes one may observe around the erosion small circumferential segments of very irregular design.

This last character is pathognomonic of herpes; it is due to the fact that the whole sore in herpes results from the fusion of several small absolutely circular sores. This character is not met with in chancre, which is developed as an isolated and not a grouped lesion.

But the ulterior evolution of the lesion will always be the criterion *par excellence*. If the case be one of herpes, the lesion is soon repaired, and cicatrizes readily. If one has to deal with chancre, the duration of the sore will be longer, at least this is so in the majority of cases. It will acquire characters which will become more and more marked, and adenopathy will be established in an unequivocal manner. Finally, all doubt, if any then remain, will be removed some weeks later by the appearance of constitutional symptoms.

A cause of error to be avoided, and one which has not hitherto been pointed out, is the *possible coexistence of both lesions*, herpes and chancre, on the same subject, in the same situation, and at the same time. This coexistence is frequent in the female, and I have often had occasion to observe syphilitic chancres, at the edges of which were radiating groups of herpetic sores, or, again, disseminated and confluent herpetic erosions, in the midst of which was a true chancre.

Erosive vulvitis also is sometimes confounded with chancre. This affection, which is more frequent in infancy than at any other period of life, can generally be distinguished very easily from chancre by the following characters: the erosions most frequently are multiple and superficial; there is general redness of the affected parts; the labia are swollen and cedematous; there is abundant suppuration of a blennorrhagic character, and the whole region is painful. Sometimes, however, the lesions which cause this form of vulvitis may very much simulate chancre, and for some days deceive a practised eye.

It is especially important to distinguish syphilitic chancre from the exuberant or ulcerative form of simple chancre. This point of differential diagnosis is of the highest importance.

According to M. Fournier, the clinical elements of this diagnosis are the following:—

Simple Chancre is generally multiple, and often even confluent. This occurs

notedly in the female, where it is a rare event to find but *one* simple chancre. This lesion is a true excavated ulcer, with abrupt, sharply-cut edges, which are often undermined. The base is unequal, anfractuous, and has a worm-eaten appearance. It is of a clear and bright yellow color. From it there is an abundant secretion of true pus. The base is supple and soft, and presents only a diffused inflammatory resistance, and a pasty, œdematous hardness, resembling that of the base of a boil. There is no glandular reaction, but rather an acute inflammatory bubo, which generally suppurates, and is converted, after the discharge of the pus, into a true glandular chancre. The pus from a simple chancre can be inoculated on the same patient.

Syphilitic Chancre.—Often unique, rarely multiple, never confluent, it is more frequently a simple erosion than an ulcer, and is generally less excavated than the simple chancre. It has no distinct edges, but an adherent contour, often raised *en couronne*, forming a circular roll. The base is smooth and shining. The coloration is grayish, or brownish red, similar to the tint of muscle. The secretion is scanty and sero-sanious, rather than purulent. The base is more or less indurated; the hardness, when deep-seated, being knotty and circumscribed; when superficial, recalling the consistence of parchment. This induration is limited to the base of the chancre, and ceases suddenly, thus affording a sensation *sui generis* which reminds one of the dry and hard feeling of cardboard or of cartilage, and very different from the pasty hardness of inflammation, or of œdematous engorgement. The adenopathy, which is constant and necessary, is indolent, aphlegmatic, hard, and generally polyglandular. The secretion from a syphilitic chancre is not inoculable on the same patient.

Finally, the *ulterior evolution* is, in doubtful cases, the sole element which clears up all doubt. The surgeon who is so bold as to diagnose a syphilitic chancre from the ulcer alone, without waiting for the remote and ulterior evolution, commits a most blamable act of imprudence. This conception of the ulterior evolution will, in certain special diagnoses, be the indispensable and obligatory controlling test of the opinion formed concerning the nature of the primary affection.

In the presence of lamentable errors and confusions, which have been recorded in scientific annals, and which have been often made by learned, skilled, and cautious clinical observers and by consummate masters of this kind of diagnosis, M. Fournier has laid down the following conclusions:—

1. The diagnosis of a chancre from a chancre alone, especially in the female, is liable, even in the hands of masters of the art, to be attended by so many surprises and errors, that it ought not to be formulated without reserve or appeal.

2. The absolute diagnosis of chancre—and such ought to be medico-legal diagnosis of this lesion—cannot and should not be established except on these two bases: the chancre on the one hand; and on the other, the ulterior evolution; that is to say, the constitutional affections which, after a short interval, succeed the chancre.

ART. 142.—*Three Cases of Traumatic Tetanus Cured by Chloral and Warm Baths.*

By Dr. G. LAVO.

(*Annali di Med.*, February, and *The Lancet*, March 30.)

Dr. G. Lavo publishes these three cases. They were observed almost at the same time at the Hospital of Brescia, and had a very favorable issue. The first case was a man of twenty-six, who met with lacerated and contused wounds of the scalp. The lesser ones healed in a few days, and the more extensive wounds in a fortnight. At that period difficulty of deglutition occurred, and soon the tetanic symptoms made their appearance. Chloral was first given by the mouth, and warm baths (99° to 100° Fahr.) repeated night and morning. Hypodermic injections of the same substance were soon had recourse to, and the chloral was alternated with laudanum, the warm baths being regularly and

daily persevered in. On the thirteenth day the improvement was considerable, and after the application of a few leeches to the anal region, the patient was discharged in excellent condition. He had taken about eight ounces of chloral, and used twenty-five baths.

The second patient was twenty-one years old, and showed symptoms of tetanus a fortnight after a contused and lacerated wound of the foot. Woorara was first used at the patient's residence, but failed; and he was received in hospital fifty days after the infliction of the wound, and thirty-five after the first appearance of the tetanic symptoms. Ordered ninety grains of chloral, and a hot bath. These means were continued for a fortnight, with an occasional enema; and the patient was discharged cured after having taken some ferruginous cod-liver oil. He had taken altogether about six ounces of chloral and used fifteen baths.

The third patient was a man of forty-two, who met, by the falling of a stone, with a contused and lacerated wound of the foot. The tetanic symptoms appeared twenty-five days afterwards, and the man being removed to the hospital, the same treatment was adopted which had proved so beneficial in the first two cases. In this instance, however, hypodermic injection of seven grains of chloral was used concurrently with the internal administration of the same. In about thirteen days the improvement was manifest, and the patient, who had seen the recovery and exit of his two companions in misfortune, could be kept in hospital no longer, and furtively left the institution.

ART. 143.—*On the Use of the Bavarian Apparatus in the Treatment of Fractures.*¹

By ANTHONY H. CORLEY, M.D., Queen's University, Ireland,
F.R.C.S.I., etc.

(*Medical Press and Circular*, Feb. 14.)

Some months ago Dr. Corley introduced a new method of treating fractures of the long bones. An apparatus which enables us to dispense with the use of splints, which permits us to inspect daily, if necessary, the state of the fractured limb, and which allows the patient to escape the wearisome necessity of six or eight weeks unchanging "dorsal decubitus," must quickly, when properly understood, supersede for ordinary cases every other method of treatment.

The appliances are few and inexpensive. A yard of the cheapest flannel, a pound or so of plaster of Paris, a few large pins with their heads bent, and a piece of calico or common roller make the surgeon independent of the surgical instrument maker. The flannel is cut into two rectangular pieces the length of the fractured bone, and broad enough to encircle the limb and to leave a margin. One is a little wider than the other. Placing the narrow one evenly over the other, they are sewn together by longitudinal stitching down the mesial line. They now resemble two sheets of note paper stitched together at the fold, the outer a little larger than the inner.

Raising the fractured limb carefully, the flannel is to be spread smoothly under it, taking care that the line of sewing corresponds to the posterior mesial line of the limb. The two ends of the inner sheet are now brought evenly over the limb and fastened together by means of the bent pins, leaving the two outer half sheets spread on the surface of the bed. By extension, counter-extension, and manipulation, exact coaptation is secured, and now the plaster, mixed to a proper consistency with water, is partly smeared and partly poured on. The two outer sheets of flannel are rapidly brought over the surface of the plaster (which is now caught on both sides between the inner and outer layers) and are held together at their margins till the plaster sets, taking care that the extension and counter-extension are kept steadily up during that period. The pins must now be taken out (and it is for this purpose that their heads are bent),

¹ Read before the Surgical Society.

the edges trimmed, a few turns of the roller now being applied, and the entire operation, which does not occupy ten minutes, is finished. Muscular spasm at once ceases, the patient acquires the power of shifting his position, and a steady equable lateral pressure is secured, adapted exactly to the shape and inequalities of the limb.

Should it be necessary to maintain any peculiar position, as in the treatment of Pott's and Colles's fracture, the assistant holds the limb while the plaster is setting, and a firm rigid case is at once secured, exercising uniform pressure, incapable of slipping, and maintaining the fractured ends in steady apposition. But the most important advantage connected with this apparatus is the facility with which it may be taken off. Most plaster and starch bandages are not only troublesome to apply, but so difficult to remove, that there is a strong natural tendency on the part of the surgeon to leave them on, and trust that the bones are uniting properly.

ART. 144.—*Removal of Corns.*

(*Edinburgh Medical Journal*, June.)

Hard corns may be carefully picked out by the aid of a small sharp-pointed scalpel or tenotomy knife, and if well done the cure is often radical, always perfect for the time. But they may be equally successfully removed by wearing over them for a few days a small plaster made by melting a piece of stick diachylon (*emplastrum plumbi*), and dropping it on a piece of white silk. The corn gradually loosens from the subjacent healthy skin, and can be readily pulled or picked out. Soft corns require the use of astringents, such as alum dissolved in white of egg, or the careful application of tincture of iodine. Prevention, however, is in regard to them better than cure, and can be readily attained by daily friction with cold water between the toes.

ART. 145.—*On the Influence of Age on the Choice of Methods of Treatment in Surgical Affections.*¹

By M. GOSSELIN.

(*Gazette Médicale de Paris*, No. 15, 1872.)

"It is my intention to point out here the influence exercised by the age of the subject on the choice of methods of treatment in the surgical affections of adolescents, and I propose, in order to determine this choice, that I should be guided by the following formula:—

"The special spontaneous surgical affections of young people have a tendency to endure, to extend, or to relapse as long as adolescence lasts. When once adult age has been attained these tendencies are lost:

"Let us now examine the application of this formula to the treatment of the spontaneous affections peculiar to adolescence.

"1. For *ingrowing nail* many methods of treatment have been recommended, and surgeons are always ready to find some fresh plan, as those at present practised are followed so often by relapse. But this tendency to relapse is due to the fact that the patient is young and preserves the special pathological aptitude in virtue of which the affection was first produced. For my part I have not had occasion to observe a relapse after the age of twenty-five years, from which I conclude that whilst every care ought to be taken to avoid the return of the affection, one cannot expect to obtain a definite and certain cure by any kind of proceeding until the patient has reached the age of twenty-three or twenty-four years.

"2. In *painful valgus*, which I have also called *tarsalgia*, I have established that this affection is due to a special arthro-ostitis of the tarsus, developed in consequence of increased growth of this part of the skeleton, and the capital

¹ Communicated to the Académie des Sciences.

indication in the treatment of which is to relieve the pain of locomotion and the concomitant contractions of the muscles of the leg, and, by removing these, to prevent a termination in muscular contraction—a permanent valgus and ankylosis. The best means for obtaining this result are: rest, an immovable apparatus, and sometimes section of the lateral peroneal tendons and electricity. But whilst the subject is young a relapse is not always inevitable. When it has taken place one ought to return to the employment of similar means, and not to conclude too rashly that the affection is incurable. By persevering in the treatment until the patient has attained adult age one may guard him or her from the deformity and consequent infirmity which would always take place whenever the affection is left to itself.

"3. In *acute suppurating epiphysal ostitis*, whenever it is not so intense as to necessitate a primary amputation or to cause death, and when it has terminated in long-continued necrosis, I do not advise early recourse to amputation. For in cases of this kind I have seen the necrosis subside, and a definite cure take place in patients who, after arriving at their twenty-fifth or twenty-sixth year, had lost the predisposition to suppurating ostitis, which was a consequence of early age and of aberration of nutrition at the period of the union of the epiphyses.

"4. With regard to *epiphysal exostosis*, experience has taught me that this tumor ceases to grow and to be painful when the patient has passed out of the period of adolescence. As ablation is a dangerous operation, I think it better to temporize in cases of this kind, and to leave the disease to itself.

"5. In *sub-ungual exostosis* of the great toe, an affection where, in consequence of the trouble and pain it causes, it is necessary for the surgeon to intervene, the objection made to the majority of methods of ablation is again the occurrence of relapse. But here, as with the ingrowing nail, although relapses may have taken place whilst the patient was young, I have seen the affection subside after the adult period had been attained.

"6. But the consideration of age has capital consequences, especially in cases of *large naso-pharyngeal fibrous polypi*: growths which, on account of their dimensions, cannot be treated even in a palliative manner without a preliminary operation, which opens up a passage towards their points of implantation. I reject resection of the superior maxillary bone, because it endangers life, and leaves mutilation of the face, without protecting the patient absolutely from relapse. I prefer dividing the velum palati and the palatine arch according to M. Nélaton's method, and I restrict myself to making only palliative operations of incisions and cauterization, in order to preserve the life of the patient until the epoch of adult age, when he will have lost, according to every probability, his predisposition to the growth and reproduction of his tumor. This precept, which has been already formulated by M. Legouest, was applied, with great apparent success, to a young man, the treatment of whom I commenced when he was twenty-two years of age, and in whom death from suffocation was prevented by a partial excision made after the division of the palatine arch, and who, after contending for fifteen months against incessant relapse, was finally freed of his tumor. The disappearance took place in February, 1871, and promises to be permanent."

ART. 146.—*On the Anatomical Changes that are Produced in the Spinal Cord after Amputation of a Limb or Section of the Nerves of this Limb.*¹

By M. A. VULPIAN.

(*Gazette Hebdomadaire*, No. 10, 1872.)

"Total or partial amputation of a limb in man determines remarkable changes in the region of the spinal cord, from which are derived the nerves supplying the amputated part. These changes consist essentially in a diminu-

¹ Communicated to the Académie des Sciences.

tion, in every sense, of the dimensions of the corresponding half of the cord in this region, contrarily to what I remarked concerning the first cases which I examined, and conformably to what has been pointed out by Dr. Dickenson. The region which undergoes these changes in the greatest degree is the posterior part of the spinal cord; that is to say, the posterior horn and the posterior column. This diminution in every sense of the dimensions of the altered parts is not due to an actual morbid change of the structure; there is neither interstitial myelitis nor granulo-fatty atrophy of the constituent elements of the tissue of the spinal cord. In some quite exceptional cases, the interstitial tissue of the altered posterior column is slightly hypertrophied. Perhaps in those cases there had for a long time been violent pains in the stump. As a general rule, one observes simple atrophy, that is to say, a reduction of the diameter of the elements, principally the nervous tubes.

"The changes produced in the spinal cord after amputation have been observed not only when the amputation had been performed before the period of the arrest of the body's growth, but also after it had been performed in adult life, and even in old age. The changes, however, are the more rapid and the better marked as the period of life is less advanced. For these changes to become very manifest in adult age, an interval is always necessary of several months at least between the day of the operation and the time of death.

"It will be asked if the local atrophy of the cord, in cases of amputation, be due principally to the section of the nerves made during the operation. In order to clear up this point, it is necessary to cut the nerves of a limb, leaving the other parts. I have made sections of the greater sciatic nerve on one side, and sometimes also of the crural nerve on the same side, in various animals (dogs, rabbits, guinea-pigs). After varying intervals I examined the dorsal and lumbar regions of the spinal cord in these animals. Two or three months after the operation, and in young rabbits even thirty-six days, I made out an atrophy of the corresponding half of the cord in the region corresponding to the roots of the divided nerves, and this atrophy presented the same characters as that observed in man after amputation. This local atrophy of the corresponding half of the cord is then in most, if not all cases, due to the section of the nerves of the amputated limb."

ART. 147.—*A Case of Sudden Death after an Operation.*

By Dr. H. FISCHER, of Breslau.

(*Berliner klinische Wochenschrift*, viii. 24, 1871; *Schmidt's Jahrbücher*, No. 10, 1871.)

Chloroform does not prevent shock. This fact is of importance in considering cases of sudden death after operation with administration of chloroform. In the following case chloroform was clearly not the cause of death.

Dr. Fischer performed resection of the left upper jaw for the removal of a giant-cell sarcoma. The patient, who was a man aged fifty-six years, had been much exhausted by long-continued pain, and by a prolonged treatment with iodine, and by mercurial inunction applied under a mistaken notion that the disease in the jaw was due to syphilis. He had frequent attacks of syncope. On examination of the chest, the heart was found to be intact. The patient was allowed to take but a few inhalations of chloroform, and just enough to reduce the pain attending the incision of the skin and the dissection of the soft parts. After the preliminary stages of the operation had been completed, the patient was quite aroused from his light sleep, and uttered loud cries. Chloroform was not administered again. The operation was performed rapidly, and without any interruption. There was not very great loss of blood. When the jaw was removed the patient suddenly collapsed; the face became pale, and the skin cool; the pulse ceased, and the respiration was very irregular. No stridor was audible, and no cyanosis was recognizable. A prolonged pause in the respiration was followed by some deep and prolonged inspirations. Next the beats and sounds of the heart suddenly ceased. Artificial respiration was

then carried into practice, and, although no signs of suffocation were present, tracheotomy was performed. After a few short respirations unmistakable signs of death came on. On the post-mortem examination all the organs were found intact; the brain was anæmic; the heart quite empty; and the liver, spleen, and kidneys congested. Without doubt the patient died from shock.

SECT. II.—SPECIAL QUESTIONS IN SURGERY.

(A) CONCERNING THE HEAD AND NECK.

ART. 148.—*Treatment of Conical Cornea by Removal of the Top of the Cone.*

By C. BADER, Ophthalmic Assistant-Surgeon, Guy's Hospital.

(*The Lancet*, January 20.)

The favorable results obtained by the operation of removing the top of the cone in conical cornea induces Mr. Bader to publish several cases. The first case was operated on in 1863.¹ Since then, up to August, 1871, nine cases have been treated in the same manner: in seven cases the left eye, in one the right, and in one both eyes were operated on.

"1. *The operation.*—Place the patient on a bed as for extraction of cataract, and bring him thoroughly under chloroform.

"2. Keep the eyelids open with a stop-speculum, so as to press upon the eyeball as little as possible, and fix the eyeball with the forceps.

"3. Immediately before commencing the operation, ascertain the position of the top of the cone by turning the eye to be operated on in different directions, while strong light is thrown upon the cornea with a two-inch convex lens.

"4. The subsequent steps of the operation, however they be taken, should tend to remove the top of the cone (the entire thickness of the cornea), so as to cut an opening through the cornea into the aqueous chamber. This opening, somewhat oval-shaped, is from one-twelfth to one-sixteenth of an inch in its longest diameter; it was measured immediately after removal of the apex of the cone, after escape of the aqueous humor, the cornea having collapsed and being in contact with the iris. The pupil, in all cases, was opposite the opening in the cornea; the surface of the lens could be seen bulging into the area of the pupil. In the cases in which the thread was used, the latter caused an indentation in the crystalline lens while passing across the area of the pupil.

"5. *Removal of the top of the cone.*—A small curved needle, armed with fine white or black silk, or with silver wire (or a gilded, small, sharp hook), is thrust through the cornea in its horizontal diameter, close to the portion of cornea we wish to remove. The point of the needle, after piercing the cornea, is carried horizontally across the aqueous chamber to a spot opposite the point of entrance, and again thrust through the cornea close to the portion of cornea we intend to remove. The aqueous humor escapes before or after passing the point of the needle through the cornea the second time. The needle or sharp hook is left in the cornea until the top of the cone has been removed; it helps to protect and keep back the crystalline lens. The portion of cornea (the top of the cone) situated in front of the needle is then removed as best we can. This part of the operation is somewhat difficult, the cornea being transparent, or nearly so, extremely thin and flaccid, and the iris and lens being in contact with the cornea. The head of the needle is held in one hand, and with a cataract-knife, or with a sharp, narrow, lancet-shaped knife, an incision is made through the cornea (small flap incision, as in flap extraction for cataract). Having made the incision, the needle is let go, the small flap seized with an

¹ See page 192 of author's book on the "Natural and Morbid Changes of the Human Eye."

iris-forceps, and the rest of the cornea (of the cone) removed with the knife or scissors.

"6. *Closure of the wound (opening) in the cornea.*—If a sharp hook, or a needle without thread has been used for transfixing the cone, it is withdrawn after removal of the cone, and the wound left open. The eyelids of both eyes are then closed, kept bound up and cool with wet lint, and the patient kept in bed for three days; on the third day the use of the eye not operated on is permitted, while the eye operated on is kept bound up until all redness has subsided. If a needle, armed with silk thread has been used, the needle, after removal of the cone, is drawn out gently by the second opening in the cornea; so that the thread, while passing across the aqueous chamber, the surface of the iris, pupil, and crystalline lens irritates those parts as little as possible. The opening in the cornea is closed by tying the thread, as is done when uniting the margins of a wound by a suture. The suture is tied tightly. If it should give a little before completing the knot, it does not signify. The cornea, by closing the suture, is thrown into numerous folds. This folded condition continued in an extreme degree in one case for nearly four weeks. Having united the wound, one end of the thread is cut off close, the others left about a quarter of an inch long, so as to assist when removing the suture. Both eyes are kept cool and bound up with wet lint. The patient remains in bed. The suture is removed on the appearance of slight chemosis and swelling of the eyelids.

"7. *Removal of the suture.*—The patient, being rendered insensible (by methylene), the lids are kept open without pressing upon the eyeball, the surface of the cornea is well cleared from mucus, etc., and the long end of the suture drawn away from the cornea, so as to stretch the suture, and the latter cut through and withdrawn. After this, the lids of both eyes are again carefully kept bound up with wet lint. The use of the eye not operated on is permitted on the third day after removal of the suture. The operated eye is kept bound up, and the lint cool, until all redness of the eyeball has subsided, or nearly so, when an artificial pupil is made.

"8. Any other mode of destroying the apex of the cone in conical cornea—for instance, by the galvanic cautery—would, I believe, answer as well as abscission of the cone.

"*Disadvantages of the operation.*—An opaque spot in the cornea, from where the cone had been removed. The patients were told that there would, after the operation, remain a small white speck on the eye, but that nothing except an operation could improve sight. None of the patients complained of the disfigurement, and all were pleased with the amount of vision obtained.

"The necessity of giving an anæsthetic repeatedly. For removal of the suture, and for the artificial pupil, methylene is quite sufficient.

"*Advantages of the operation.*—In extreme cases of conical cornea a greater improvement of sight is obtained than by any of the known modes of treatment.

"No untoward accident occurred in any of the cases.

"The after-treatment, after the removal of the suture, is very simple. The patient need only be seen at great intervals.

"The conical cornea in all cases completely disappeared, and gave way to an abnormally flat cornea."

ART. 149.—*Ten Cases of "Ulcus Corneæ Serpens."*

By E. WILLIAMS, M.D., Cincinnati, Ohio.

(*Cincinnati Lancet and Observer*; and *The Medical Record*, December 15, 1871.)

Dr. Williams describes ten cases of this form of ulcerative keratitis, and the treatment by incision, which was first described and practised by Sämisch. He remarks, in closing, that this operation proposed by Sämisch far excels all other modes of treatment on record. The importance of the operation does not simply consist in the restoration of the diseased or injured organ to useful

vision, but in warding off the glaucomatous process, which is frequently set up in an eye with a clouded pupil. It must also be remembered that by preventing adhesion between the iris and capsule of the lens, and between the iris and cornea, etc., sympathetic ophthalmia is also avoided.

In the performance of the operation the best instrument for transfixing the base of the ulcer is, in most cases, a narrow Graefe's cataract-knife. In some cases, however, the chemosis of the conjunctiva so flattens the cornea that a straight knife cannot be conveniently used. In such cases a narrow sickle-shaped knife is far better.

ART. 150.—*On Cachectic, or so-called Syphilitic Keratitis.*¹

By M. PANAS.

(*Gazette Hebdomadaire*, No. 45, 1872.)

"In 1857 Mr. Hutchinson endeavored to connect this form of keratitis with hereditary syphilis. In 1859 and 1860 this author furnished fresh proofs, and in 1863 he published a memoir in which he discussed the affection in all its details. The following, according to Hutchinson, are the principal characters of the keratitis in question: A finely spotted interstitial clouding of the cornea, which proceeds from the centre to the circumference, and finally gives to the whole of the cornea the appearance of ground glass; a very fine radiated vascularity at the periphery of the membrane; both eyes are attacked in succession; the progress is slow. The proofs given by the author in favor of this affection being a manifestation of hereditary syphilis, are the following: a peculiar physiognomy in the patients; cicatrices or old fissures at the angles of the mouth; sinking of the bridge of the nose; a row of permanent teeth remarkable for their small size and bad color, the two superior incisors being frequently notched at their free border; great mortality among the children of the same family. In 19 cases out of 30 one or both of the parents had had syphilis before the birth of the affected child; in 32 cases out of 38 the affected children had had infantile syphilis. Whilst swelling of the lymphatic glands is rare, nodes, ulceration of the velum palati, and lupus are frequent complications of this form of keratitis.

"Cases of this affection were subsequently published by Stanley, Teale, Lawrence, Watson, Taylor, and Haller, all of whom agree in the views of Mr. Hutchinson. Mooren, on the other hand, denies that there is any relation between the peculiar conformation of the teeth described by Mr. Hutchinson and this form of keratitis.

"Before giving my opinion I will relate the cases which I have observed.

CASE 1.—Joseph B., aged twenty-one years, a sweeper, of small stature, was admitted into the St. Louis Hospital on February 13, 1866, with an affection of the eyes. The head was square and the forehead large, the jaw was badly developed, and the teeth were small, black, and without any special notch on their crowns. A model of the jaw proved that the case was one of rachitic change of the teeth without traces of notching. Instead of sixteen teeth the jaw carried but nine—four incisors, two canines, three small molars. The skin of the face was dark and rough, the nose flat, the eyes small, and the hair scanty. No cicatrices or eruption upon the skin, no glandular enlargement. Until this attack the patient had never had any affection of the eyes. No syphilitic antecedents either in the patient or in his parents. Has one brother, who is in good health.

About a month before admission sight commenced to fail, six days previously the left eye became red and painful. There is now some conjunctival congestion, with a pericorneal vascular circle encroaching on this membrane over an extent of three millimetres. This circle is made up of very fine rectilinear vessels situated in the thickness of the cornea under the epithelial layer, probably upon the membrane of Bowman. The whole cornea, and especially its central and upper parts, is the seat of an interstitial opacity which gives it the appearance of ground glass. With ob-

¹ Communicated to the Société de Chirurgie of Paris.

lique illumination may be observed a punctated exfoliation of the epithelium of the anterior surface of the cornea. In short, we find all the symptoms of diffuse or interstitial keratitis attributed by Hutchinson to hereditary syphilis. The pupil is not perceptible, so an ophthalmoscopic examination is impossible. Vision is reduced to a simple perception of light. The patient complains of slight circumorbital pains; there is very little of photophobia and lachrymation. The eyelids are sound.

The right eye does not seem to be affected. With oblique illumination, however, slight clouding may be perceived in the centre of the cornea. During the first month of treatment I employed, but without success, calomel in small doses, and afterwards an atropine collyrium. I then prescribed iodide of potassium, of which two grammes daily were first taken and subsequently four grammes. The cornea soon cleared and became free of vessels: at the end of the second month the patient was cured. On the day of his discharge the left eye presented no traces of vascularization, and there was but an almost imperceptible clouding at the centre of the cornea: the patient could read No. VII. of the Giraud-Teulon scale. The pupil was normal and the fundus of the eye free from disease.

CASE 2. Eugénie L., aged eighteen years, was admitted on May 15th, 1869. This was the first ocular affection that she had had. She was of lymphatic temperament, but not scrofulous. About six weeks before admission the right eye became rapidly clouded, but without any pain, and three weeks later the left eye was similarly affected. The right cornea is now much clouded, and at its periphery there is fine and radiated injection. The patient can scarcely distinguish No. VI. of the Giraud-Teulon scale at the distance of one foot. In the left eye there is a similar clouding of the cornea and more vascularity; there was very little photophobia. Treatment: two grammes of iodide of potassium daily. On July 19 the patient was discharged quite cured.

CASE 3.—Alexandre D., aged twelve years; constitution very feeble, free from syphilis and scrofula. The teeth are long, white, and regular. This lad has double diffuse keratitis; the aspect of the two corneæ is characteristic. Two grammes of iodide of potassium were administered daily. At the end of six weeks the corneæ were clear and the patient could read No. IV. of the Giraud-Teulon scale.

CASE 4.—Bauer, a female, twenty-five years of age; double diffuse keratitis; has frequently suffered from bad eyes. Can neither read nor work. Incisor teeth normal. No syphilitic antecedents.

"These observations contradict the ideas held by Mr. Hutchinson; in no case did the teeth present the conformation described by this surgeon. I never found in my patients any antecedent of syphilis. I have seen too many syphilitic patients at the Louvaine and Midi to admit that hereditary syphilis may manifest itself tardily at the age of twelve, twenty-five, and thirty years, and when nothing has appeared during early infancy. Mackenzie was in the right when he described this kind of disease under the title of chronic scrofulous keratitis; it is necessary, however, to remark that the patients do not present the apparent signs of scrofula.

"To resume: Firstly, the syphilitic origin of diffuse keratitis, described by Hutchinson under the title of syphilitic keratitis, may be doubted; secondly, the abnormal configuration of the teeth is far from constant, and, when it does exist, recalls altogether the condition of rachitic teeth; thirdly, the name of cachectic keratitis is best fitted for this affection; fourthly, the medicinal agent which seems to exert an elective therapeutical action is iodide of potassium."

ART. 151.—*Canthoplasty in Conjunctival and Corneal Affections.*

By H. ALTHOF, M.D.

(*New York Medical Journal*, March.)

At a meeting of the Medical Society of the County of New York, Dr. Althof read a paper entitled "Clinical Notes on Diseases of Conjunctiva and Cornea." Its main object was to call attention to an important element, hitherto rather neglected, in the therapeutics of these affections,—viz., the diminishing of the pressure of the lids upon the globe. After a review of the present methods of treating the more serious forms of conjunctival disorder—granular

lids, diphtheria, blennorrhœa, etc.—all of them only partially under the control of the physician, it entered more directly upon its special subject.

Thus far, three different procedures had been occasionally followed for the purpose of relieving the ball of the eye from excessive pressure—viz., incisions or excisions of chemotic conjunctiva; removal of a triangular piece of skin (down to the muscle) from the upper lid; and splitting of the outer angle. This last method undoubtedly suited best; but its good effect was very transitory, the wound healing up in too short a time (a couple of hours) to give any permanent relief. If, therefore, a way could be found to modify this remedy, so as to make its results lasting, the therapeutic means at our disposal would receive a valuable addition. This Dr. Althof thought to have found in the little operation known under the name of *canthoplasty*—the splitting of the external commissure down to the conjunctival sac, and careful uniting of the conjunctiva to the outer integument.

The results of this simple procedure had been very favorable, a large number of cases at present testifying to its efficiency. It had rapidly become popular in our great infirmaries, and was now, after five years' trial, considered by American oculists a very welcome remedy in cases which had baffled the most skilful efforts, and in diseases against which the prevailing treatment was almost powerless. Granular lids and phlyctenular conjunctivitis and keratitis furnished the great majority of cases in which canthoplasty might be employed with advantage—to cut off acute attacks, to diminish the number of relapses or prevent them altogether, and to give other remedies a better chance for effecting a perfect cure. In genuine diphtheria the doctor thought it almost indispensable; and blennorrhœa in its most acute and destructive forms lost most of its dangers.

Dr. H. D. Noyes agreed with Dr. Althof in his high estimate of the operation of canthoplasty. It had become as much a *sine quâ non* in the treatment of trachoma as had iridectomy in that of glaucoma and diseases of the iris.

The remarks upon diphtheritic conjunctivitis had especially interested him from the fact that he had, within three weeks, had in his practice four cases of the affection, one of them very severe, involving the ocular as well as the palpebral conjunctiva. Up to six months ago his experience had furnished him with but few examples of this disease. Since that time he had had perhaps a dozen; and he believed the occurrence of these cases in such close succession was coincident with an unusual prevalence of scarlet fever, and of croupous affections generally.

As to the therapeutics of conjunctival disorders, there was less need of discovering new means of treatment than of learning precision in the application of those now known; for their number was already bewildering.

Dr. Agnew's experience had confirmed his belief in the bold use of canthoplasty. He had been led to modify the operation by division of the edge of the external tarsal ligament of the upper lid only, as exposed in the wound. It was the pressure of the tarsal cartilage of the upper lid which caused the chief trouble; and the incision of skin and mucous membrane alone would not always make such pressure harmless. He felt confident that, since the introduction of iridectomy, no other addition so important as canthoplasty had been made to the resources of ophthalmic therapeutics.

Dr. Edward Curtis could testify to the value of the procedure in phlyctenular conjunctivitis, the promptness of its effect seeming at times almost magical. He related a case, attended with great photophobia, cured by its means in a couple of days.

Dr. R. H. Derby thought that the advantage of the operation lay perhaps as much in its enabling the surgeon to reach the retro-tarsal fold with his applications as in the relief from pressure it afforded. Von Graefe objected to its employment in diphtheritic conjunctivitis, from the danger that any wound in such a case might itself become the seat of diphtheritic deposit.

Dr. Althof had had only seventeen cases of diphtheritic conjunctivitis in five years, up to September last, though since then he had seen at least twenty. He would not set his own slight experience against Von Graefe's; but, although he had always found the diphtheritic deposit infiltrating the incision, as it does wounds of other parts, yet he regarded this as of slight consequence

when compared with the great advantages conferred by the operation. By the time the diphtheritic trouble was cured, the wound was well healed, and no harm had come of it.

Dr. Roosa had never seen any grave consequences from the operation as performed by Dr. Althof, though he had several times seen ectropion of the lower lid follow, as a result, perhaps, of the incision having been made not horizontally outward, but obliquely downward. He had known, however, one or two instances of serious injury from the operation, where the dissection of the conjunctiva was made very thorough and carried into the orbital tissue. In one case the eye was lost. Four years ago he had had a dispensary-case of phlyctenular keratitis relieved most remarkably, in twelve hours, by the operation. He was not aware at the time that it had been previously performed for this form of disease.

Dr. Loring had been anticipated by the last speaker in most of what he was about to say. He had observed some half a dozen cases of ectropion due to the operation; and had several times seen trouble from too free a dissection of the parts. He thought the division of the external tarsal ligament, suggested by Dr. Agnew, should be limited to those cases in which trachoma had progressed to the extent of converting the inner surface of the lid into a hard, cicatricial tissue, which, by its contraction, had warped the tarsal cartilage, increasing its natural curvature, so as to bring its sharp edge against the cornea. He had himself formerly employed the method, originally proposed by Pagenstecher, of dissecting up the conjunctiva so as to make a considerable flap, the sides of which were so stitched to the skin, near the outer extremity of the horizontal incision, as to convert this into a wound, with its long diameter vertical. But this produced much greater deformity than the method followed by Dr. Althof; and, moreover, as before remarked, the liberal incision into the orbit was by no means free from danger. He had seen two instances of severe inflammation from it, one of them being that referred to by Dr. Roosa, in which the eye was destroyed. He had, therefore, abandoned the plan in favor of the simple operation recommended in the paper. In this, as there stated, the stitch at the angle was the main point upon which success would depend.

Dr. Agnew did not mean to say that he would cut the tarsal ligament in every case, or that he would ever cut it in the lower lid. But he would incise it oftener than recommended by Dr. Loring, on account of the danger of relapse when this was omitted. Indeed, he had more than once been obliged to divide the ligament by a secondary operation, where the ordinary horizontal incision, previously made by another surgeon, had proved insufficient. There was no difficult dissection required, and no danger of orbital cellulitis. It usually sufficed to make the incision through the edge of the ligament, near its insertion into the periosteum of the orbital rim. It need not be cut in such simple cases as those of phlyctenular ophthalmia with photophobia.

ART. 152.—*On the Treatment of Ophthalmia Pustularis.*

By Dr. J. HOCK, of Vienna.

(*Oesterreichische Jahrbuch für Pädiatrik*, 1871, p. 41; *Schmidt's Jahrbücher*, No. 11, 1871.)

The author lays down the following indications for the treatment of the inflammatory forms known as scrofulous ophthalmia:—

If the eye be merely reddened, and vesicular eruption be present, the case is one presenting chiefly catarrhal phenomena, and may be treated with a weak solution of corrosive sublimate as a collyrium, with the addition of two or three drops of laudanum.

If papules or small blebs be present on the cornea, and there be photophobia, powdered calomel should be applied locally. If, however, the cornea be marked by punctated opacity, and the photophobia be intense, the use of

calomel should be deferred for some days, and only a lotion of corrosive sublimate be used.

If papules be present on the cornea, the local application of calomel is useful only when the pupil is dilated. If the pupil be contracted, atropine drops should be used to overcome the mydriasis, and their use be continued until the ciliary irritation has ceased.

On the formation of the so-called scrofulous vascular lines, the use of belladonna salve, in addition to that of mydriatics, is often necessary. The eye also must be kept from the light, and covered by folds of lint.

When the irritative phenomena are very intense, and palpebral spasm and lachrymation are well marked, vascular keratitis is usually present, and then the best treatment consists in the dropping in of a tepid solution of atropine. If there be no eczema, use may be made of a salve of opium and belladonna. The mydriasis must be persistent before the surgeon can have recourse to the local use of calomel.

In pannous conditions, dropping in tincture of opium, or pencilling the lids with a salve of yellow precipitate, may sometimes be beneficial.

In ulceration of the cornea, an instillation of atropine frequently repeated daily is indispensable. If the ulcer has involved the deep layers of the cornea, so as to threaten perforation, a pressure-bandage should be applied.

ART. 153.—*On a New Proceeding for the Destruction of the Capsule of the Lens in the Operation for Cataract.*¹

By M. PERRIN.

(*Gazette Hebdomadaire*, No. 43, 1871.)

"The generalization of the linear method has rendered very rare the immediate dangers of extraction—such as iritis, herniæ, inflammation of the globe, etc.; but it is not so with regard to secondary cataracts. These, indeed, are more frequently inevitable. Opacities occur after the most successful extraction of cataract. With lateral illumination, one may almost always make out that the pupil is incumbered by a delicate gray network, in which can often be observed a very small orifice, corresponding to the breach made by the cystotome at the time of the operation. The pupillar opacities are often so slight that they do not much disturb the vision, the patient being able to read and write. In other instances, although the immediate results of the operation may have been free from complications, the opacities represent a veil sufficiently thick to call for a consecutive discission. Finally the opacity is often so great as to constitute a failure of the operation.

"These opacities have in most instances their starting point in the retention within the eye of some of the cortical layers of the lens. This retention is due to the very nature of the cataract, and it is on this account that the retrogressive soft cataract, the zonular cataract, etc., inspire less security than other forms; but it seems to me to be very much favored by the mode in which the capsular sac has been opened. A linear or crucial incision does not allow the lens to escape readily; it presses against the lips of the capsular wound, tears them laterally, and so tends to leave behind its most viscid parts. When the evolution of the lens has been accomplished, the flaps of the capsule, fixed at their periphery, but movable in the papillary field, remain in place. The inward rolling which a healthy and isolated capsule undergoes has very little effect upon the patient, by reason, without doubt, of the presence of viscid debris which covers the external surfaces of the flaps; and this is proved by the fact that the flaps are often joined together by a newly-formed vitreous material, which leaves in the capsule a much smaller orifice than that produced by the original breach. It results from this that the elements of the lens left within the eye, and represented either by the subcapsular epithelial layer or by the

¹ Communicated to the *Société de Chirurgie*.

crystalline fibres, affected or not with cataractous degeneration, are bathed for too short a period by the aqueous humor, which element is indispensable to their absorption. They rest covered by the débris of the capsule, and are isolated by about the eighth day, when the union of the flaps is completed; the breach is then closed; the débris may be transformed, but it cannot disappear.

"In other cases secondary cataract is the result of proliferation of the sub-capsular cells. This hypergenesis may be sufficiently active to give to the internal face of the capsule the appearance of a surface roughened by papillæ. Finally, secondary cataract may also be the consequence of deposits upon the lens anterior to the operation—deposits of coagulable lymph or fibrine, of calcareous salts, of urea, fat, etc. The retention of these various elements within the eye is a permanent cause of irritation which often bears its fruits. At a given moment, towards the sixth, eighth, or twelfth day, the iris resists the action of atropine, and a layer of exudation is formed which adds to the opacity. The pupil is contracted, and represented for several weeks by a small surface occupied by a white resistant false membrane. The anterior part of the capsule is the almost exclusive seat of these false membranes.

"The capsule is the great cause of embarrassment during the operation, and of danger afterwards. If one could do away with this, it would be an advantageous step. In 1773 Heister recommended the extraction of the capsule with the lens; Beer, and quite recently Pagenstecher and Wechler, have done the same. Notwithstanding the success which has attended these bold attempts, I hold that the proceedings recommended or employed for extracting the lens and its capsule are dangerous. But although they represent a bad general method, they may be required to render service in certain cases. If one could extract the anterior layer of the capsule, the source of danger would be removed. I think that I have found a means of attaining this. My proceeding differs from others in the mode by which the capsule is attacked. The various cystitomes make a button-hole wound, and in the favorable cases a small triangular flap. I hope to have discovered the means of removing this layer, if not in its totality at least its most injurious part, in a new instrument to which I have given the name of capsular claw—*griffe capsulaire*.

"The capsular claw is composed of a small oval steel disk, resembling very much in form and dimensions those of Graefe's traction hook; its terminal border is armed with small teeth inserted at about 45 degrees, and with the form of flattened pyramids. These teeth juxtaposed at their bases are well tempered and furnished with cutting edges. The small disk is supported by a stalk fitted to a handle of the ordinary model for ocolistic instruments. The arrangement of the teeth is such that their simultaneous penetration through a tense membrane produces a clean cut, the extent of which is equal to the width of the instrument. If at this moment one makes slight traction at right angles to the direction of the incision, this is elongated by lateral lacerations which are prolonged more or less obliquely, as far as the fixed points of the membrane, and serve to detach a greater part of it. The application of this instrument on the cadaver and on animals has constantly succeeded in detaching very extensively the capsule of the lens.

"The employment of this instrument exposes the patient to no danger. The linear section of the cornea and the excision of the iris being terminated, the claw is introduced between the lips of the wound, care being taken to apply the back of the instrument against the anterior lip in order to avoid any confusion; it is then conducted to the extreme part of the pupil. The instrument is then applied to the capsule; this having been divided at the desired points, the instrument is withdrawn in slightly lowering the handle in such a manner as to follow very closely the curve represented by the convexity of the lens. When the claw has been brought back to the level of the wound it is necessary, in order to disengage the teeth and to prevent them from being caught in the posterior flap, to return it for a short distance, and then to support it against the corneal flap as at the time of operation.

"In eight patients operated upon with this claw, I was able to assure myself that the lens had been reclined by the degree of clearness and the purity of the pupil. In those cataracts which may be called malignant, the use of the claw

would be attended with but very slight advantages: the teeth would divide the capsule into small fibrillæ which, notwithstanding all efforts, would remain in the pupillar field. To resume: this new operative proceeding seems to me to offer the following advantages which longer experience will serve either to confirm or to weaken:—

"1. Without complicating the operation for extraction, it permits the surgeon to recline the injurious part of anterior layer of the capsule, and in this manner to destroy the capsular sac.

"2. It serves to dispose of the almost unique cause of secondary cataracts.

"3. It facilitates the escape of the cataract, expulsion of the cortical masses, and absorption of the débris left in the eye.

"4. The capsular claw may be substituted with advantage for the capsular forceps in cases where it is proposed to attempt extraction of the pupillar opacities."

ART. 154.—*Anæsthesia of the Retina produced by an Overdose of Quinine.*

By J. VOSE SOLOMON, F.R.C.S., Professor of Ophthalmology in Queen's College, and Surgeon to the Birmingham and Midland Eye Hospital.

(*Birmingham Medical Review.*)

The records of cases in which a large dose of quinine has produced serious disorder of the visual sense are sufficiently few in number and meagre in detail to warrant the publication of the following instance:—

"On the 12th of March, 1869, Mr. M., a seafaring man, of education, and in easy circumstances, aged thirty, who had been in India, China, and the South Sea Islands, consulted me for a failure of vision, of which he gave the following history: 'Nine days since, March 3d, I took at seven in the evening a tea-spoonful of Howard's sulphate of quinine for the relief of severe tic in my left temple. The medicine soon produced slight vertigo, chilliness, a sense of sickness, and failure of sight. On the next morning I took an emetic, in the hope that it would alleviate the sickness.' The patient, who is naturally an excitable man, was more so than usual, and apprehensive of blindness falling upon him.

"*State of Vision.*"—I found he could read brilliant type (Jaeger's No. 1), a single letter only at a time (syllabically), so contracted was his field of vision, or, in other words, so complete was the anæsthesia of the whole retina, except the point occupied by the yellow spot. His sight, he stated, had been on some days worse than it was upon his visit to me. The power of adjustment was unimpaired, and there was an absence of strabismus.

"*Field of Vision.*"—On testing the visual field of the right eye with my fingers, I discovered that to even so gross a test there was abolition of all the fields, except at a point opposite the yellow spot. In the left eye the temporal field was good, the nasal reduced to two inches; the patient's nose was small, and hence had no influence in the contraction of the latter.

"*Appearance of the Eye.*"—The pupils were of normal diameters, and moved sluggishly; there was no external congestion.

"*The Tension of the globes* was normal, the right being perhaps a little firmer of the two. An *ophthalmoscopic* examination revealed a normal state of the optic nerves and retina. The choroids were of a bright red color, which may have been due, in some measure, to exposure to the heat and glare of the hot climates the patient had visited.

"*Treatment.*"—I prescribed a bromide of potash mixture, with a view to the allayment of the mental excitement, and a small blister to the nape of the neck.

"The ophthalmic symptoms gradually subsided, but his brain continued to evince signs of irritation, and in 1870, the patient suffered from several epileptic seizures; nevertheless he again went to sea, and in December, 1871, when last

¹ Of each eye.

seen by me, declared himself to be in perfect health—a statement which his general appearance seemed to justify. In consequence of the patient having limited his consultations with me to two occasions, I have been able to give no more than a very general sketch of his progress after our first interview.

Remarks.—The great rarity of instances of retinal disturbance from an overdose of quinine may be judged by the fact that no case is recorded in any one of our ophthalmic treatises, and with a single exception the subject is not even referred to, and in that exceptional instance is dismissed in some half dozen lines. In a case related by Trousseau and Pidoux, forty-eight grains of quinine, taken for the relief of asthma, marked by periodicity, produced in seven hours *blindness*, deafness, delirium, vertigo, and vomiting—symptoms which subsided in the course of the following night.”¹

ART. 155.—*Cases of Injury to the Eye.*

By GEORGE C. HARLAN, M.D., Surgeon to Wills Ophthalmic Hospital.

(*American Journal of the Medical Sciences*, January.)

“As the following cases, occurring recently in the practice of the hospital, present some points not frequently met with, they seem of sufficient interest to record.

CASE 1.—L. W., æt. about fifteen, seven months before application at the hospital dispensary, was struck on the closed upper lid of the right eye with a tin horn thrown by a playmate. There was a slight cicatrix on the lid just above its ciliary margin, and an indistinct scar exactly at the corneo-sclerotic junction, occupying its lower and inner third. Not a vestige of the iris remained, the fundus giving a bright red reflex even with diffused daylight.

Ophthalmoscopic examination by the erect image showed the fundus normal, except a slight separation of the retina at the ora serrata at a point corresponding to the cicatrix in the ball; it also showed a high degree of hypermetropia, which, when properly tested, was found to equal 1-3.5. The catoptric test revealed absence of the lens.

The eye unaided had scarcely more than quantitative vision, but with a stenopæic hole and a + 1-3.5 glass, No. XXX. of Snellen's types could be read at twenty feet, and some of the letters of No. XX. could be made out.

Adding + $\frac{1}{2}$ for accommodation, gave + 2 $\frac{1}{2}$, with which the smallest type of the text-book could be freely read at one foot.

When a point of light was thrown upon the fundus by means of a convex lens, the retinal vessels and the optic disk could be distinctly seen by the unaided eye, placed as nearly as possible in the line of the emergent rays. This was confirmed by Drs. Hunt, Thompson, and Norris, who examined the case.

The wound of the ball through which the lens and iris were forced out was, of course, not a direct injury, but a rupture by contre-coup. The cicatrix was so indistinct that it escaped notice until the discovery by the ophthalmoscope of the lesion at the ora serrata directed especial attention to the part.

“It is certainly remarkable that so inexperienced an operator as a rough school-boy, with so crude an instrument as a tin-horn, could have extracted the lens with a result more perfect than is often attained by the most accomplished operators with the most delicate of instruments.”

CASE 2.—The day before the appearance of the above case, a man presented himself who had lost the whole of his iris, through a wound of the cornea, except a small triangular piece, with its base at the attached circumference and its apex adherent to the cornea, which had been held by its anterior synechia. The lens was undisturbed.

“As the man disappeared before the examination was completed, the case is of little interest except as an illustration of the strange coincidence of unusual cases, which seems almost a law.”

¹ *Vide Pereira*, vol. II. part ii. ed. 3.

CASE 3.—I recall from memory a case in which the lens had been dislocated by a blow, in a very myopic patient, with an extensive posterior staphyloma. When the lens, which was dancing about in the vitreous, was thrown out of the line of vision by the position of the head, vision was greatly improved by its absence. He was quite proud, for instance, of being able to see, with great distinctness, a fly upon the ceiling, which he had never done in his life before.

CASE 4.—A boy, twelve years of age, employed in a type foundry, was brought to the hospital about two weeks ago, just after some of the molten metal had been splashed into his eye.

The lids were partially open, showing plainly the nature of the injury. A little process of the metal projected through the commissure, and some of the lashes of the upper lid had become involved in it as it hardened. These were cut, and with a strabismus-hook placed under the lower edge of the mass, it was tilted out in the same manner as an artificial eye, and with as much ease. As it was moulded between the ball and the lids, its resemblance in form to an artificial eye was very striking. It measured about six-eighths of an inch in each direction, and weighed seventy-three grains.

Vision was of course destroyed, but the ball did not suppurate or the cornea slough. There is now complete symblepharon of both lids, but no indication, as yet, of sympathetic trouble in the other eye.

CASE 5.—A few days afterwards a plumber was engaged in putting up a hitching-post in the street, when some of his melted solder was blown into his eye. He came at once to the hospital, with his eye closed and sealed, the lashes being tightly soldered together. When the lashes were cut, the metal dropped off, and the eye was found to be uninjured.

CASE 6.—A boy, nineteen years of age, was admitted to the hospital a few weeks ago to be treated for pain in a blind and shrunken bulb, and sympathetic irritation of the other eye.

Four years before he had been struck in the eye by a piece of cold steel from a nut-punch. He stated that he had never been quite free from pain since, but that the symptoms of weakness and irritability of the other eye had only commenced a month before. There was a deep cicatrix, a kind of notch, at the upper and inner part of the ball, extending through the ciliary region, which was excessively sensitive, the patient starting, as if from an electric shock, when it was touched. When the injured eye was extirpated, a piece of iron was found embedded in the orbital tissue. It was an eighth of an inch wide and more than an inch long, and must have passed through the eye to reach its position behind it and the inner side of the internal rectus muscle. Its surface was rough, and it was held so closely by the surrounding tissue that it was found impossible to remove it until it was dissected out, almost like a piece of bone, from its periosteum. The operation was followed by complete relief.

"It is worthy of remark, though not a very unusual circumstance, that the symptoms of sympathetic ophthalmia did not supervene until nearly four years after the injury."

ART. 156—*Peculiar Treatment of Syphilitic Iritis.*

By Dr. DE MAGRI.

(*Giornale delle Mal-Venerie*, February; and *The Lancet*, March 23.)

Dr. De Magri, of Milan, has treated a series of cases of this kind by injecting calomel into the left arm. He usually injects six grains of calomel suspended in glycerine; an abscess, mostly connected with sloughing, forms, and the eye instantly improves. Atropine is, however, freely instilled into the latter, and the improvement is attributed to the powerful counter-irritation exerted in the arm. Even cases of pannus and scrofulous keratitis are thus treated, and with equal success.

Now when it is recollected that it is maintained by some men of experience that atropine alone is sufficient in such cases, the faith in the revulsive action is a little shaken. Then it may be asked whether an abscess excited by other substances than calomel would not be as efficacious; or whether the author supposes that this salt acts on the whole organism. That calomel does good

in iritis, whether syphilitic or not, is still believed by those who do not ignore the experience of the past. How much simpler then to give this mercurial chloride by the mouth, and have recourse to simple counter-irritation on the temple, not neglecting atropine. Hypodermic injections are the fashion of the day; they are useful, but they should not, without good reason, take the place of other methods of treatment. So with chloral, which is now tried for almost everything; we have, for example, Dr. Accetella,¹ who dresses sores, both primary and tertiary, with a concentrated solution of the hydrate. Some benefit was obtained, but it always remains to be seen whether other and older applications would not have done as well or better.

ART. 157.—*The Uses of Atropia.*

By ERNEST HART, late Ophthalmic and Aural Surgeon to St. Mary's Hospital.

(*British Medical Journal*, April 27.)

Mr. Hart does not think that he shall be using an exaggerated form of expression, or going beyond the strict and well-balanced weight of words which is necessary to give due force to the fact to be conveyed, if he says that we could, in the treatment of ophthalmic disease, better afford at this day, so far as our knowledge of disease and means of mastering it extend, to dispense with all other drugs, lotions, and applications put together, than with this one *topical* medicament. Let us consider what atropine does for the inflamed eye. It allays local sensitiveness, and removes local spasm; it gives to the eye and to internal muscular apparatus—iris and ciliary muscle—physiological rest, the greatest of all curative means. Nor does it do this only, but, in dilating the pupillary aperture, it drives far from us the bugbear which long haunted the ophthalmic surgeon, and which still pursues those who are not sedulously active in the use of atropia—closure of the contracted pupil by an adherent plug of lymph, and gluing of the uveal surface of the iris to the lens. It would rob the consulting surgeon of a great many profitable but trying operations, if the atropine eye-drops were ready in every surgery, not only on all emergencies, but for the exigencies of daily practice. It is as safe a rule in ophthalmic practice to use an atropine drop when in doubt, as in whist to play a trump! Mr. Hart can hardly think of more than one absolute contra-indication, and that is the existing oval dilatation of the iris in glaucoma. There are, of course, also mechanical contra-indications, as in peripheral wounds of the cornea with hernia of the iris, where to dilate the iris is to increase the peripheral protrusion; but even here, the moment the corneal gap is healed, atropia becomes of the first necessity. But in all cases of iritis, in contusions and injuries of the eye, in corneitis, purulent ophthalmia, scrofulous ophthalmia, and deep-seated mixed inflammations of the eye, the local instillation of a solution of atropia is the most precious of therapeutic means. The most useful strength is, Mr. Hart thinks, expressed in the formula: Neutral sulphate of atropia, two grains; glycerine, five drops; distilled water, an ounce. The frequency of the use of the drop must vary with the facility and rapidity with which it acts. Where the iris has become much inflamed before the local treatment is adopted, it is sometimes very indocile, slow to respond, and hard to dilate. Then the measure of frequency must be the amount of resistance, and perseverance must be the rule of treatment. In the treatment of keratitis and minor cases of deeper inflammations, one application a day, or at most two, will suffice; and presently, once in two or three days. It will be enough then to keep the pupil dilated, and the ciliary apparatus at rest and free from tormenting spasm. The present result of the most careful observation of the origin and cause of ophthalmic disease, pursued with the advantages of the improved methods of optical diagnosis now at our command, is to simplify our treatment, and to ostracize a majority of superfluous agents of medication.

¹ *L'Independente*, No. 2, 1872.

With a little cotton-wool, alum, and glycerine, hot and cold water and atropine, and a pocket-case of instruments, we can treat with a previously unattainable success nearly the whole range of ophthalmic diseases. Mr. Hart will not undertake to say that mercury is useless in the treatment of some forms of (syphilitic) iritis; but he affirms that he has repeatedly seen iritis occur and run a very severe course in patients previously and at the time already under the influence of mercury; and that, in a long series of cases which he treated by atropia and careful dieting only, and without mercury, during five years at St. Mary's Hospital, the results were so excellent that he could not affirm that they would have been improved by the most guarded and judicious use of mercury.

It is possible, though not easy, to abuse atropine. It must not be used in glaucoma or in peripheral wounds of the cornea. A case or two of troublesome constitutional symptoms, through absorption of the excess by the lachrymal mucous membrane, have been recorded. This is never likely to occur with ordinary care, and Mr. Hart has never seen it occur; but it may be well to bear in mind in treating infants. The most convenient and unfailing application may be made by the use of the atropized gelatine disks which the author introduced a few years since, and which are now used in this country and abroad. They are always ready, do not spoil by time, and are clean and precisely dosed, each disk containing as much as a drop of the solution mentioned.

ART. 158.—*Albuminuric Retinitis.*

By H. R. SWANZY, M.B., L.R.C.S.I., Ophthalmic Surgeon to the Adelaide Hospital, Dublin, and Surgeon to the National Eye and Ear Infirmary; late assistant to the late Professor VON GRAEFE, Berlin.

(*Medical Press and Circular.*)

Mr. Swanzy, speaking of this affection, says: "Every one who has busied himself specially with diseases of the eye must have had frequent occasion to diagnosticate Bright's disease by the ophthalmoscopic appearances, while, as yet, there were no other prominent symptoms." The disturbance of the function of the eye being the first thing which would lead the patient to seek medical advice, he thinks the physician who takes the trouble to learn the use of this instrument will be abundantly paid, during his first five years' practice, in his ability to use it as a means of diagnosis in this affection alone. He says that "as a general rule, in those cases where the eye gives the first indication of the presence of Bright's disease, the progress of the latter is from that time very rapid. From three to six or eight weeks is commonly long enough to bring the case to a fatal termination, and it is rare for these patients to live for three or four months after the sight has become affected."

ART. 159.—*Amblyopia from White Atrophy of Optic Nerve greatly benefited by the Continuous Galvanic Current.*

By DONALD FRASER, M.D.

(*Glasgow Medical Journal*, February.)

An extremely interesting case of this is recorded by Dr. Donald Fraser, of Paisley. The subject of it was a weaver, aged fifty-nine; had always been a healthy man, and temperate; for the last ten years has smoked two and a half ounces of tobacco per week. At the age of forty-four he began to use spectacles for presbyopia. For the last nine years of his work as a weaver he taxed his eyes severely at pattern-weaving, working most of the day, during the greater part of the year, in gaslight. For the last five years his sight had been gradually failing. It was not, however, until the beginning of last year that he began to be alarmed at the rapid increase of this failure. He now became dyspeptic, low spirited and weak; all this due, he considered, to the depressing

effects of some family troubles. At this time, during the day, a mist came before his eyes, which passed away at twilight, so that by gaslight he could read, for a few minutes at a time, the largest type of the newspapers with No. 6 convex glasses. About nine months ago even this became impossible. When he consulted Dr. Fraser, September 8, 1871, "he complained of a mist being constantly before his eyes, so that he was unable to recognize his most intimate friends above a yard off. I found that he could read slowly, and with effort, No. 20 of Snellen's test types at four inches from his eyes with the right eye, at eight inches with the left, and at six inches with both. On examination with the ophthalmoscope, the outer two-thirds of the optic disk in both eyes was found to be pearly white in tint and glistening, and the inner third hyperæmic, the retinal veins were enlarged and tortuous, and the arteries diminished in number and calibre. Alongside some of the vessels were to be seen the white lines said to be characteristic of *neuritis descendens*. There was here then a markedly atrophic condition of the optic nerve, most probably primary; there being no certain evidence either by the ophthalmoscope, or otherwise, of intra-ocular cases sufficient to produce such atrophy. I dismissed the idea of the disease being due to tobacco poisoning, although, in some respects, the condition of the disk seemed closely allied to what is usually described as due to excess in smoking. At the same time there was not, and never had been, any symptom of cerebral affection. Still I have been strongly impressed with the idea that this was a case of primary degeneration of the optic nerve, a degeneration which may find illustration in cases of so-called tobacco amaurosis. Dr. Fraser advised the patient to consult Dr. Thomas Reed, of Glasgow, who confirmed the diagnosis, and recommended the use of bichloride of mercury in combination with iodide of potassium, which treatment was commenced on the 10th of September, and continued for a month. During this time the patient was a good deal at the coast, and came back to town much improved in general health. His sight, however, was scarcely, if at all, improved; although he could read No. 20 at $7\frac{1}{2}$ inches. At this visit I passed a current from six cells of a Stöhrer's battery through the temples for about twenty seconds. On testing his sight immediately afterwards, I found that he could read No. 20 at $9\frac{1}{2}$ inches; an improvement of two inches within a period of as many minutes. I advised him, however, to go on with the bichloride mixture for another week or so. I saw him again on the 8th October, when I found, as I expected, his temporary gain had left him, he being only able to see No. 20 at $7\frac{1}{2}$ inches as before. I may here mention that in reading, my patient always sought to make the best of his case, so that the limit of clear definition would be more correctly stated at an inch less than the above figure. I again tested him with the current, the result being an improvement of three inches. Two days afterwards he could read at $8\frac{1}{2}$ inches. I again applied the current, and immediately afterwards he read at 10 inches. Feeling satisfied now that the galvanic treatment would yield good results, I asked him to cease taking the mixture, and to call upon me every morning at 10 A.M. In order to insure accuracy in the results, I kept him to the same hour, position as to light, etc. The days at this season, and at the above hour, were usually dark and foggy; conditions, by the way, in which he could see best. On clear, sunny days, he described the mist as being particularly thick and dark before his eyes. About a week after I began the galvanic treatment he improved in this respect, being able to see best on a clear day.

"I continued the galvanization daily for a month, then every second day, sometimes every third day, and again every day as I thought fit. I sought to avoid the dangers of over-stimulation by the weakness of the current—six cells—and the shortness of the application, which never exceeded thirty seconds. I applied the electrodes at first to the temples, and to the long axis of the head, at each break of the current producing the flash indicative of retinal irritation. Latterly, I applied one to the forehead, the other to the tongue, with alterations. Occasionally, and experimentally, I applied a current from eight cells to the cervical sympathetic—the results, however, never seemed so good as by the other methods.

"The treatment was continued for three months, during which time his pro-

gress was a matter of daily observation. At the end of that period he could read No. 5½ Snellen with as much ease as at the beginning he could read No. 20. The improvement in his health and spirits due to this progressive recovery of sight has been very marked." Dr. F. has tabulated the results, and it is shown that every day there was a distinct improvement of one inch in his ability to read the test types, and this improvement was confirmed by ophthalmoscopic examination. "On the 19th November, 1871," says Dr. F., "I fancied, on examining the fundus, that the condition of the disk was, if anything, slightly improved. On the 11th of January, 1872, I made a very careful examination and was satisfied that while the atrophic condition of the disk was still very marked, there was an improvement. This was particularly so in the case of the retinal circulation, the arteries being distinctly larger in calibre, while the veins were smaller and much less tortuous. As it was an important point that there should be no doubt as to this improvement, I again asked my patient to see Dr. Reid, who substantially agreed with me.

"The question now is, how far this improvement will go. I do not expect that much more can be effected in the case, although I mean to continue the treatment twice a week or so for some time to come. A more important question is, how far will the results be permanent? My impression is that with care on the part of the patient his present condition may be maintained for a considerable length of time, if not permanently.

"But whether this be so or not, it is evident from the ophthalmoscopic examinations, that we have not simply stimulated the patient's retina, but that we have distinctly improved its circulation, as well as the nutrition of the optic nerve, and that this has been done in a disease in which ordinary medical treatment is practically useless."

ART. 160.—*Melanotic Tumor of the Eye; Excision of the Globe and Application of the Chloride-of-Zinc Paste to the Tissues within the Orbit; Recovery.*

Under the care of Mr. GEORGE LAWSON, at the Royal London Ophthalmic Hospital, Moorfields.

(*The Lancet*, May 11.)

The chief interest in this case is the method which Mr. Lawson adopted in applying the chloride-of-zinc paste to the tissues within the orbit after the eye had been removed. His object was to avoid the destruction of the eyelids, a result which generally follows the free application of this caustic to the parts within the orbit. In this he was successful; the chloride of zinc destroyed effectually the contents of the orbit, which came away in large sloughs, but both the eyelids remained intact. The following are the notes of the case:—

J. B., aged fifty, a tall, healthy-looking man, with no family history of cancer. About four years ago he discovered that the sight of the right eye on the temporal side was lost, and this failure of sight increased until in about six weeks he was quite blind. He then suffered from a severe attack of inflammation of the affected eye, for which he was sent to his county hospital. Under treatment all inflammation ceased, and the eye regained its external normal appearance; but the sight was lost, and with that eye he has continued blind. From that time the eye remained quiet until the present attack, which began eight weeks before he was admitted into the hospital. The eye then became exceedingly painful, the cornea ulcerated, and a vascular growth protruded, from which he had repeated attacks of hemorrhage which obliged him to seek medical assistance. On April 9th he was admitted into the Ophthalmic Hospital.

On admission, the globe was larger than the other eye and evidently distended by a growth within it. There were dark bluish-colored bulgings in the ciliary region on the upper and inner side of the eye. The greater part of the cornea was occupied by a vascular warty-looking growth, from which for the last fortnight there had been frequent hemorrhages, requiring the man to seek

assistance from a surgeon in the neighborhood, who each time succeeded in arresting the bleeding by the use of strong astringent applications.

Mr. Lawson excised the globe, the interior of which was occupied by a melanotic tumor, which had forced its way through the cornea. A pad of lint was applied over the orbit, and allowed to remain for about half an hour, until all the hemorrhage had become completely arrested. The bandage was then removed, and a speculum having been introduced between the lids, the mouth of the bag of conjunctiva from which the eye had been enucleated was carefully held open with two pairs of forceps whilst Mr. Lawson passed into it the chloride-of-zinc paste, spread on two pieces of lint. The conjunctival edges were now drawn together, and the remaining cavity of the orbit firmly filled up with a number of pieces of dried sponge, over which the lids were closed, and then a compress and bandage applied. A subcutaneous injection of morphia was given in order to avoid the pain which the chloride of zinc often occasions. On the following morning the lids were swollen, but there was no evidence of the chloride of zinc having reached them.

The patient progressed favorably; large sloughs came away from the orbit, but both the upper and lower eyelids entirely escaped the action of the caustic, and the man left the hospital April 23d.

ART. 161.—On Extraction of Cataract by a Peripheral Section of the Iris without injuring the Pupil.

By CHARLES BELL TAYLOR, M.D., F.R.C.S.E., Surgeon to the Nottingham and Midland Eye Infirmary.

(*The Lancet*, November 4.)

Dr. Taylor suggests a modification of the ordinary method of extraction, which essentially consists in removing a portion of the periphery of the iris instead of its whole breadth. He observes that prolapse of the iris has always been the bugbear of extraction wherever iridectomy has not formed a part of that operation; and yet the extreme beauty and superexcellence of the results, when no accident has occurred and when all has gone well, after one of the old flap operations, is such that we constantly find ophthalmic surgeons abandoning the modern methods to revert to the old and necessarily much more dangerous flap extraction. Dr. Taylor lays before the profession the steps of the process, which are chiefly as follows:—

As a rule he administers a mild aperient the day before the operation, and extracts the following morning before breakfast. Chloroform is much more pleasantly given under these circumstances. The risk of vomiting is to a great extent obviated, and that of all other accidents dependent upon anæsthesia diminished.

The instruments he employs are a pair of sharp forceps that pierce the sclerotic; a very high speculum (a modification of Von Graefe's); and two knives, a line in width, and bent at an angle similar to the ordinary iridectomy knife—one with a sharp point, the other with a blunt or bulbous extremity.

Having separated the lids with the speculum, he turns the eye gently downwards with a pair of ordinary forceps in the operator's right hand, and when in a favorable position, it is fixed by the sharp forceps at about the junction of the upper with the middle third of the cornea; the pointed knife is then entered in the corneo-sclerotic junction one or two lines from the forceps at the summit of the cornea, pushed well into the anterior chamber, and then, with a gentle sawing motion, carried along the summit until about one-third of the cornea has been incised. The capsule is then carefully divided with V. Graefe's cystitome, having been previously rendered tense, and the eyeball fixed with a pair of ordinary forceps. It is better, he thinks, to open the capsule at this stage, because bleeding from the wounded iris—and conjunctiva also—at a later period is apt to fill the chamber and render this part of the operation obscure and difficult. The upper segment of the iris is then seized, and a small piece of the periphery only excised, the pupillary margin and portion of iris attached

to it being left untouched and free in the anterior chamber; the lens is then extruded through the gap in the ordinary way, gliding behind the pupil, so that there is no stretching of the sphincter. In this way Dr. Taylor believes he has secured all the advantages in the way of safety and certainty of an associated iridectomy, and at the same time attained the grand desideratum, a central and movable pupil.

ART. 162.—*On Tenotomy in Myopia.*

By R. H. DERBY, M.D.

(*The Medical Record*, March 15.)

At a meeting of the Medical Library and Journal Association of New York, on February 9, Dr. R. H. Derby read a paper on "Progressive Myopia and its Operative Cure," advocating the doctrine that the large majority of cases of progressive near-sightedness are attended by, and to a great extent dependent upon, insufficiency of the internal recti, and hence to be relieved by division of one or both of the externi. The rules, so carefully elaborated by Von Graefe, both for determining the propriety of this operation, and for securing by it exactly the degree of effect intended, were given in detail. Several cases were cited from the practice of Von Graefe and others, where the myopia had not only been arrested in its progress by the operation, but had even considerably diminished after it: and the paper concluded with reports of selected cases from the writer's own records.

Dr. Knapp, while fully indorsing the rules laid down, as having rescued the operation from the domain of empiricism to that of strictly scientific surgery, was yet inclined to think the range of its applicability more limited than Von Graefe and his adherents contended. In his own experience the cases of myopia attended by a degree of insufficiency of the internal recti, sufficient to warrant the operation, were comparatively rare. Indeed, while admitting that insufficiency of these muscles was more frequent in myopic than in emmetropic and hyperopic persons, he must yet state, in opposition to Dr. Derby's assertion, that only a small percentage of the cases of near-sightedness was complicated with such insufficiency. Few cases of myopia were progressive after the age of twenty-four, or thereabouts; and in these severe ones tenotomy was apt to fail of the desired effect. This, he thought, was due to the ætiology of the affection. Pressure of the recti upon the globe had probably less to do with its causation than persistent strain of the accommodation; the steady contraction of the ciliary muscle interfering with the venous outflow at the anterior part of the eye (through the canal of Schlemm), and hence producing passive hyperæmia of the choroid with transudation, and softening in the coats of the posterior part of the globe, which then yield more readily to the intraocular pressure and become extended.

Dr. Pooley agreed with Dr. Knapp, and would cut the external recti only in cases accompanied by evident muscular asthenopia.

Dr. Derby insisted upon the insufficiency of the interni only in cases of *progressive* myopia, stating that it was found in nine-tenths of these cases. It produced its effects, doubtless not to any great extent directly, by causing an increase of pressure upon the globe; but indirectly, by inducing that very strain of the accommodation to which Dr. Knapp had referred. This was in virtue of the intimate association between the contraction of the ciliary muscle and the effort at convergence of the optic axes. If this effort were increased by weakness of the internal recti, the muscle of accommodation must be constantly stimulated to excessive action.

Dr. Pomeroy thought the difficulty of converging the optic axes was sometimes an advantage to the myope. It would lead him, when his eyes were fatigued, to abandon the effort to fuse the two images, and use one eye only, relaxing the strain upon the accommodation, and placing the object somewhat further off.

Dr. Knapp called attention to the fact that frequently the worst cases of

progressive myopia were those in which this very thing was apparent—where the patient never used but one eye for near work, and where, therefore, there could be no pressure of the recti upon the globe, or strain of accommodation from the effort at convergence. The relation between the effort to converge the axes and that to accommodate was not a fixed and necessary one—so much convergent effort necessitating so much accommodative—but was purely a matter of education.

ART. 163.—*On Ozæna.*

By PROSSER JAMES, M.D.

(*Medical Press and Circular*, December 6, 1871.)

At a meeting of the Medical Society of London, on October 20th, Dr. Prosser James read a paper on Ozæna, of which the following is an abstract:—

The author alluded to the intractability of the complaint and the almost hopelessness with which it is too often regarded by writers and practitioners, and intimated that care in diagnosis and perseverance in treatment may obtain more successful results. It should be our aim in every case to trace the origin of the ailment, and so reduce it to a mere symptom, though this is so difficult, that most authorities speak of idiopathic ozæna as a disease, and even with all the improvements as yet effected in rhinoscopy, there are undoubtedly cases in which we cannot demonstrate the actual lesion. These, however, he believed, will be gradually reduced in number. The simplest form of ozæna is that commonly spoken of as catarrhal. It is the result of chronic coryza, in fact, it is coryza with fetor superadded. The patient has suffered from colds for a long time. These became more and more chronic, till at last a discharge remained altogether, and this at length became offensive. Rhinoscopy generally shows that the pituitary membrane is hypertrophied. Sometimes erosions or ulcerations are also brought into view. In protracted cases the membrane may be atrophied, and these are much more obstinate. This kind of ozæna mostly affects strumous patients, and constitutional treatment should therefore be employed in addition to local measures. With cod-liver oil and iodide of iron, there is often rapid improvement under the same applications that have previously proved inert. A similar condition to that already described is common in syphilitic disease of the nose. Indeed, ozæna so frequently occurs in syphilis, that on asking a gentleman the other day, what he thought of ozæna, he replied, "It is a symptom of syphilis." This, however, is certainly too narrow a view. In syphilitic ozæna of this kind, it is probably the diseased condition of the mucous membrane that gives rise to the discharge, which is offensive from an early period. In catarrhal ozæna, perhaps the chronic coryza gives rise to the hypertrophy. At any rate the fetor is later in making its appearance. It is much more common for syphilitic cases to give rise to ulceration, and this, in fact, has almost always commenced before the fetor is complained of. At this stage the disease must not be neglected, for although now confined to the mucous membrane, it may even in secondary syphilis, extend deeper, and involve both the cartilages and the bones. Then the fetor is sure to be aggravated. But it is in tertiary syphilis that the graver lesions mostly occur. In these cases the deeper tissues may be invaded before the mucous membrane. A patient may seek relief from distressing ozæna, amongst other prominent symptoms, and yet the most careful rhinoscopy may only reveal the darker, dusky color of the mucous membrane with here and there erosions. In persons of a strumous constitution, the destruction will be much more rapid, and it is therefore desirable to prescribe for the scrofula as well as the venereal disease. When erosions or ulcerations can be brought into view by reflected light, they should be treated by its aid locally. Nitrate of silver, sulphate of copper, and other appropriate remedies, may be carefully applied to these spots. But the whole pituitary membrane should also be subjected to other agents. The ozæna that occurs in children in connection with inherited syphilis, is often difficult to treat, and the investigation of its pathology is attended with peculiar

difficulties. Clinically the chief point is to treat the inherited syphilis, and to bear in mind that the child may be also scrofulous. Rhinoscopically thickening of the membrane is most common. It has been remarked, that syphilis may attack the deeper tissues first or may extend to them. The former is more common in tertiary disease, and may begin as a gummatous periostitis, going on perhaps to caries and necrosis of the bones and cartilages, which exfoliate and give rise to great and characteristic disfigurement. The disease may continue its ravages until the unfortunate patient succumbs to intra-cranial mischief. Acute syphilitic periostitis is a very painful disease. The patient's sufferings are exacerbated by warmth. Hence the leading symptom is intense pain in the forehead and head, worse at night—i. e., when warm in bed. During the exfoliation of pieces of bone, the ozæna is most offensive. Some people have attributed this exfoliation to the abuse of mercury, but it may occur when we have reason to believe that drug has not been used, and it therefore seems just to speak of it as one of the manifestations of syphilis, although, no doubt, it might be aggravated by the injudicious use of the mineral. Besides, it is desirable not to forget that caries may occur from other causes than syphilis, for example, mechanical injury. Sometimes the rhinoscope reveals very little to us, and yet the ozæna is all the while dependent on diseased bone which cannot be brought within the range of vision. The prognosis therefore in persons with a syphilitic taint, should be guarded.

Among other causes of ozæna, mechanical injury, already incidentally alluded to, should be inquired about. Then the presence of foreign bodies is far more common than is generally supposed, especially in children. Sometimes beads, bits of pencil, and other bodies are put up the nostrils by children, and remain for weeks or months, in a few cases for years. They are quite forgotten, and the ozæna persists until they are discovered by the rhinoscope and extracted. Those singular formations, nasal calculi, may also be mentioned. Again, ozæna may be named as one of the sequelæ of the exanthemata. Abscess may occur in these diseases, and the septum may be destroyed. In strumous children, the bones or cartilages may suffer after these diseases. There are some other causes of which time prevented the consideration, but the author could not lose the opportunity of mentioning the naso-palatine glandular disease described by his friend and colleague the President of the Society, in the first volume of the *London Hospital Reports*. *Treatment*: Some points in treatment have already been incidentally mentioned. In every case local measures should be resorted to, and in the great majority constitutional remedies are indispensable. The first point is to clear away the discharges. Until this is accomplished, the diagnosis itself cannot be properly made. What can the most skilful use of the rhinoscope show on a surface covered with discharge or crusts? The use of the nasal douche and the syringe is then the first measure. This will probably have to be continued assiduously. At first common salt, chlorate of potash, carbonate of soda, or other saline, should be used in the proportion of a teaspoonful to a pint or a quart of tepid water. Other substances had also been used by the author, and among them chloride of aluminum. This gave fair results, but the best remedy was a permanganate. The comfort this gives to patients is remarkable, and under its persistent use the membrane assumes a healthy appearance. It at once removes the fetor in many cases, and this is all in all to the patient. A weak solution may be employed at first, gradually increasing it until it produces a little smarting, for it should not be forgotten that this substance is a powerful caustic, one of the best and safest we can employ. Ulcerations and erosions may be touched with a strong solution or with a paste, and the whole membrane thoroughly and frequently washed with a weaker solution by means of the nasal douche, the atomizer and camel-hair brushes. Mercurial lotions are used by some, but are not so effectual as permanganates, and the risk of absorption, after the recent case of a far more justifiable resort to the mineral, cannot be overlooked. Various powders by insufflation are sometimes effectual, though this mode of medication has serious drawbacks. Inhalation of vapors, especially that of iodine, is often of great value. Of course, small abscesses are to be opened, pieces of exfoliated bone removed, and other ordinary indications carried out. With regard to consti-

tutional treatment, scrofula has already been mentioned. Anæmia and any cachexia may be present, and if so is of the greatest importance. Then as to syphilis. It must always be treated through the system. Some would use mercury for syphilitic ozena, but the author does not employ it. Sir B. Brodie thought it hastened the separation of dead bone. Mr. Henry Lee had mentioned to the author some cases that benefited by calomel baths. The author would rather iodize than salivate. He gave iodide of potassium in large doses. The dose is to be measured by its effect on the disease, and the ability of the patient to bear it. Although iodide of potassium is mentioned as the constitutional remedy, because it is the most common form of administering iodine, one object of this paper was to bring before the Society the value of other salts of the metalloid. The author had obtained important results in syphilitic diseases of the throat, nose, and mouth, from other iodine salts. It is clearly not the potash which cures syphilis, and feeling this, he gave full trial to iodide of sodium. Soda is a constituent of the frame, and is always more easily assimilable than potash. The sodic salt is more pleasant to the taste. Weight for weight, it contains more iodine than the potassic salt. It can frequently be taken by patients who cannot tolerate the more commonly used salt. When abroad, the author learned that his experience was corroborated in the Vienna hospitals. Iodide of calcium is also an excellent preparation. It is easily borne by the system, and much more agreeable to take. It may in fact be used as a substitute for table salt. It is really desirable that the profession should recognize that all the salts of iodine are not so unpalatable as the one in common use. A specimen of iodide of calcium was exhibited, which had been prepared for the author by his accomplished friend, Mr. Tichborne, of the Dublin Apothecaries' Hall. It was when formed a beautiful crystalline mass, but had been broken up.

ART. 164.—*Polypus of the Ear.*

By W. B. DALBY, F.R.C.S., M.B. Cantab., Lecturer on Aural Surgery at St. George's Hospital.

(*The Lancet*, December 9, 1871.)

From a tumor of considerable size, which occupies the whole of the external auditory meatus and projects for some distance from the external orifice, to a growth no larger than a small seed, and which can only by careful examination with reflected light be discovered lying within the tympanum behind a perforation of the tympanic membrane, polypi of the ear present every variety of form and shape. It will generally be found that they have been preceded by disease of the middle ear, which has resulted in a perforation of the tympanic membrane, purulent catarrh with scarlet fever being the commonest of all forms. The immediately exciting cause of the growth seems to be the purulent discharge which attends this condition.

These polypi are at times very vascular, and when they are so there is a good deal of bleeding after their removal. When they do not attain any considerable size, a very common appearance for them to present is a red, fleshy, globular mass projecting through a perforation in the membrane. In such a case they grow from the cavity of the tympanum, and from their situation, by preventing the escape of discharge, sometimes thus become the indirect cause of death in those fatal cases where the lateral sinus and brain become involved.

The reasons for which their removal generally is demanded are the continuous offensive discharge from the ear and deafness, both of which symptoms are their invariable accompaniments. The most usual position from which aural polypi arise is some part of the walls or roof of the tympanum; they also spring from the external meatus and from the tympanic membrane itself. After one polypus has been removed from the cavity of the tympanum, it not unfrequently happens that one or even two more are brought into view. In looking down a speculum where the membrane has been completely destroyed,

it is not always easy to decide at first sight whether the red mass at the bottom of the meatus is a small polypus or simply granulations on the lining membrane of tympanum. This, however, is ascertained by examination with a probe, when a polypus will be found to move under the touch. Indeed, this should always be practised so as to determine, as nearly as possible, the point from which the growth arises.

With regard to removing the polypus. If it be very large, the best instrument is a Wilde's snare armed with fine gimp. If of moderate size or small, simple rectangular forceps, meeting at the points by two rings, are the most convenient. The lever ring forceps of Toynbee are not often necessary, and at the best will only grasp a small growth. While using any kind, or in applying caustics, the meatus should be illuminated with diffused daylight through the largest speculum that it will hold, the reflector being worn on the forehead and fastened with a band round the head; both hands will thus be quite free. The most effective caustic Mr. Dalby finds to be chloro-acetic acid, applied on a very small camel's hair brush. In using this, care should be taken not to touch the meatus; and provided this is done, very little pain is felt; but if this should happen, it is relieved at once by syringing with warm water. Potassa fusa and chloride of zinc are not so manageable, and the former is liable to spread on to more parts than it is necessary should be touched. Nitrate of silver is not sufficiently powerful, but it is a very useful caustic to apply to granulations on the membrane or on the surface of the cavity of the tympanum. The liquor plumbi is useful for the same purpose, and may be applied with a camel's hair brush, or in the form of a piece of cotton-wool soaked in it and worn for a few hours every day pressed on to the part. It is well before any of these applications to dry the part carefully with cotton-wool.

ART. 165.—*Wounds and Injuries of the Membrana Tympani.*

By Professor H. KNAPP, M.D.

(*The Medical Record*, March 15.)

The causes tending to injure this delicate membrane are quite numerous—penetrating instruments and foreign bodies, by external force or violence, such as fracture of the temporal bone, blows upon the side of the head, falls, etc.; sudden concussions of air, as in pertussis, loud, sharp reports from heavy pieces of artillery.

Gruber says that the membrana tympani bears very high degrees of pressure (from four to five atmospheres) without bursting. He thinks that only in membranes previously diseased a rupture is liable to occur by sudden increase of atmospheric pressure. The bleeding in pertussis and other diseases is not always a symptom of rupture of the membrane, as also the blood-vessels of the conjunctiva and other membranes are very apt to burst in this disease.

The *symptoms* are:—

Pain, mostly of an intense character, at the moment of the rupture. Sometimes, however, no pain is felt.

Fainting, which may be repeated during the next twenty-four hours.

Convulsions are very rare.

A *loud noise or crash* at the moment of the rupture, caused by the tearing of the fibres or the sudden pressure upon the labyrinth. The noise persists for some days, in most cases, but gradually diminishing in intensity.

The *hearing is impaired* in every case where the membrana tympani was normal before the accident, but it may be improved in cases of diseased membrana tympani, for then the membrane is no longer a septum barring the entrance to the waves of sound, the latter having immediate access to the stapes and the membrana tympani secundaria.

Hyperacusis, or *sonophobia*, in rare cases: some noises or tones being very disagreeable.

Loss of the faculty of determining the direction of sound. This symptom is not constant, and soon disappears.

Extravasation, covering the rent in an otherwise normal membrane.

A rent or fissure of oval or linear shape; at times the dermoid and radiating layers retract more than the inner layers, and a wound with terraced edges is produced.

The *prognosis* of wounds and injuries to the membrane is generally favorable. Wilde, however, observes: "It is remarkable that, while we experience the greatest difficulty in keeping open a perforation made with a surgical instrument, accidental openings seldom close." This serves as an argument in favor of Gruber's statement, that the membrane was generally diseased before the perforation occurred.

The *treatment* is simple and can be readily given: Do not syringe, but let the ear alone.

Cleanse the meatus with cotton, and insert into it a light plug of cotton or wool to protect the membrane.

The healing in most cases takes place rapidly and without inflammation. If the latter ensues, the symptoms are those of myringitis.

ART. 166.—*A Case of Injury to the Head.*¹

By M. VERNEUIL.

(*Gazette Médicale de Paris*, No. 3, 1872.)

The author regards this as a case without an analogue in science, and one likely to raise very interesting questions in pathological anatomy, symptomology, etiology, and differential diagnosis.

The case was one in which a lesion, apparently very slight, and the diagnosis of which was from the first completely wrong, was followed by most serious symptoms, and caused the death of the patient.

A man aged forty-five years was admitted into the Lariboisière Hospital on the 14th of December last. This patient, about half an hour previously, had been taken from beneath an overturned railway carriage.

At the time of his admission he was in a state of extreme excitement, and very violent agitation, which prevented the surgeon from obtaining any statement, or subjecting the patient to a sufficient examination. After this agitation had gradually calmed down, the patient was able to reply with the most complete clearness to questions which were put to him.

Examination revealed the following lesions: a small and quite insignificant excoriation on the vertex; a contusion in the right inguinal region; a laceration of the perineum several centimetres in length.

As these lesions could not account for the violent anguish, the cries, the immoderate movements, and the intense disturbances in the respiration, circulation, and calorification presented by the patient at the time of his admission, M. Verneuil ascribed these to the emotion following the accident, and after having ordered a sedative draught he withdrew, postponing until the following day a more thorough examination, and a more active medication.

At four in the afternoon, the patient became furiously delirious; it was found necessary to restrain him by force, and laudanum was administered.

On the following day M. Verneuil found the patient in a state of profound coma; the eyelids were half closed, and the respiration almost stertorous. He thought at first that this condition was one of narcotism, produced by the laudanum; but on examining the patient more closely, he discovered all the symptoms of complete hemiplegia of the right side. There was complete muscular resolution on this side, whilst on the left there was a slight degree of contracture. Paralysis of sensation on the right side was not complete; one could by pricking and pinching the skin excite manifest reflex movements in the right

¹ Communicated to the Académie de Médecine.

half of the body. The pupils were normal, and neither contracted nor dilated; no strabismus. There was absolute aphasia. A catheter introduced into the bladder withdrew between 400 and 500 grammes of non-sanguinolent limpid fluid. The pulse was calm and regular; the temperature of the body 37.7°C .

What was the cerebral lesion giving rise to these symptoms? The case was evidently not one either of cerebral commotion or confusion. The sole logical explanation of this case is to be found in the hypothesis of a compression of the brain by an effusion of blood from a vessel of small calibre, which had given rise to various phenomena of excitement, furious delirium, and as the outpouring of blood increased, to coma. M. Verneuil suspected from the presence of aphasia that the frontal lobe or anterior portion of the brain was the seat of the lesion. M. Broca, to whom he mentioned the case, stated that he would find, in case of death, an effusion of blood in the region of the Sylvian fissure.

The diagnosis made by M. Verneuil was the following: Laceration of a small cerebral artery; slow effusion and accumulation of blood over the frontal region of the brain; compression extending to the base of the brain, and affecting—especially the third frontal convolution on the left side—the convolution of Broca.

The treatment consisted simply in the application of a blister, and the administration of purgatives; in short, in a but slightly active and expectant therapeutic plan of action; the condition of depression of the patient did not permit more. Towards the fifth day the face was convulsed, the temperature elevated to 40.5°C , and the pulse thready. There was also much agitation, and in the course of the day the patient succumbed.

At the autopsy nothing abnormal was found, on external examination, save a small patch of ecchymosis on the scalp. There was no trace of fracture in the vault of the cranium. The summit of the cranium, the meninges, and the brain, were then removed, but did not expose the least trace of effusion of blood, or of any kind of lesion.

M. Verneuil then inquired into the condition of the arteries of the brain. In examining the base of the cranium, and following along the sides of the sella turcica, the tract of the internal carotid artery, he observed that this vessel, at its point of entrance into the cerebral cavity, was the seat of a thrombosis; it was filled and distended by a coagulum extending through all the ramifications of the middle cerebral artery, and appearing as if the carotid and Sylvian arteries had been injected with tallow. The anterior extremity of the left temporal lobe was the seat of very extensive softening, comprising four-fifths of the corpus striatum, and a part of the optic thalamus on the same side. The brain substance, both gray and white, was altered.

These morbid changes afforded a very satisfactory explanation of the hemiplegic phenomena observed in this patient.

But how had this thrombosis of the internal carotid artery been produced? In following downwards the tract of the vessel, it was found that its calibre, and about a finger's breadth of that of the trunk of the common carotid were occupied throughout by a reddish friable clot. From this point to the base of the brain, the artery was increased by at least one-third of its size; and at the lower extremity of the clot, the calibre was suddenly diminished. By incising the artery at this part, it would be readily made out that the internal tunics had been cut across, separated from the outer membrane, and bent forwards by the current of blood; they formed valvular folds, the free borders of which were directed towards the axis of the vessel. At this point the calibre of the artery was completely obstructed by coagulated blood; the occlusion extended thence from below upward to the whole of the cranial and intracranial portions of the internal carotid, and affected also the whole extent of the middle cerebral artery. The circle of Willis was free, as were also the arteries on the opposite side.

This case raises many interesting questions, and in the first place that of the evolution of the phenomena which were here manifested. It seems probable, thinks M. Verneuil, that the laceration of the common carotid was produced at the time of the accident, and that it was undoubtedly caused by a movement of forcible tension of the neck, although the arterial tissues had not been the seat of

any previous morbid change. This laceration would at first have permitted the blood to flow to the encephalon; then, as occlusion of the vessel supervened, it gave rise to cerebral symptoms; the thrombosis gradually extending, hemiplegia affected the whole of the right side of the body; finally, ramollissement, resulting from encephalitis, declared itself towards the fourth or fifth day, at the time when the thermometer indicated a notable elevation of temperature.

This case also raised a very important question as to differential diagnosis. M. Verneuil had diagnosed cerebral compression. Blandin and Malgaigne raised objections against cerebral compression, and doubted the reality of this phenomenon, established as a dogma by J. L. Petit. In the future it will be necessary, in diagnosis, to take into account thrombosis of the cerebral arteries, and to revise Petit's dogma concerning cerebral compression.

ART. 167.—*A Case of Hydatid Ranula.*

By MAURICE LANGIER, M.D.

(*Archives Générales de Médecine*, Août, 1871; *Gazette Hebdomadaire*, No. 40, 1871.)

It is very probable that the following case is unique, and its analogue is not to be found in any treatise on pathological anatomy or surgery. It was one of an hydatid cyst of the floor of the mouth, simulating a ranula, whence the name given to it by Dr. Langier. This tumor was observed in a man aged sixty-one years, who was under the care of Professor Gosselin. The tumor made its appearance about six months before, and its development had been so rapid, that two months after the patient had noticed but a small swelling on the left side of the floor of the mouth the tumor had become very troublesome. A surgeon made a small puncture into the tumor and passed a filiform seton. Inflammation followed, but the swelling again appeared. At the time of the man's admission a tumor of the size of a large walnut occupied the left half of the floor of the mouth, and passed beyond the median line. The tongue was forced upwards and backwards. Mastication was performed with great difficulty, and was almost impossible. The speech was nasal, and scarcely intelligible.

On palpation there was found to be manifest fluctuation, but the wall of the cyst was hard and thick, and of a consistence quite different to that of a ranula. In addition, the presence of some hard and indolent submixillary glands, rolling under the finger, led to the fear of a complication. Besides this there was no other local symptom of inflammation. The growth was treated by incision into the sac, excision of the superior wall, and canterization with nitrate of silver. The patient recovered, and at the end of three months remained well.

When the incision was made it gave issue to a considerable quantity of pus, and at the same time some white membrane was expelled. Under the microscope this was found to be composed of amorphous tissue arranged in layers. The fluid contained in the hydatid cyst resembled pus, and presented a great quantity of compound granular cells, crystals of hæmatoidine and stearic acid, and finally echinococci and hooks.

The author, in comparing an hydatid cyst with tumors which have been collected under the title of ranula, establishes, as a differential character that may serve for diagnosis, the fact that in an hydatid cyst of the floor of the mouth the enveloping cyst is hard, thick, and resistant.

ART. 168.—*On a Case of Unilateral Atrophy of the Tongue.*¹

By WILLIAM FAIRLIE CLARKE, M.A., F.R.C.S., Assistant Surgeon to Charing-Cross Hospital and to the Central London Ophthalmic Hospital.

(*The Lancet*, December 9, 1871.)

Mrs. H., aged forty-five, the wife of an oilman in the north of London, became aware of a tumor in her right breast in the spring of 1869. In February, 1870, she showed it to Mr. Hume, of Devonshire Street, Islington, and he recommended that it should be removed at once, as it had all the characters of a malignant growth. It was accordingly excised on the 16th February. The wound healed slowly, but satisfactorily. On April 15th she complained of cough and slight dyspnoea, the latter only noticeable after exercise. Under treatment the cough soon disappeared, but the dyspnoea continued. On the 3d of October Mr. Hume was called suddenly, and found her suffering from a deep-seated pain on the right side of the head, of a periodic character, returning each night between 1 and 2 o'clock A. M., and rendering her for some hours incoherent and unmanageable. Many remedies were tried; but the only thing which gave her relief was morphia in grain doses. It was at this date that the atrophy of the tongue was first noticed, though it was not then so marked as it afterwards became. On March 29th, 1871, Mr. Hume was again urgently required to attend, and found the patient suffering from all the old symptoms, but in an aggravated degree; and in addition there was an alarming dysphagia, together with paroxysms of suffocation, which recurred about three times in the twenty-four hours. On being asked to protrude the tongue she always appeared unable to do so at first; and, on the request being repeated, would reply, "Wait a minute." Then, after a few moments' deliberation, she put it out very slowly. The tongue was puckered and crimped along its whole right side from base to apex, though these appearances were the most marked at the anterior two-thirds. An actual loss of substance had taken place, but it was bounded exactly by the median raphe; and the contrast between the *plumpness* of the left side and the shrivelled aspect of the right was very striking. When it was protruded, there was no deviation to either side. Articulation was slow and difficult. There was great pain along the right side of the neck, with a certain fulness and turgescence of the vessels; but no tumor could be felt in any part of the mouth or neck. Together with these symptoms there was general cachexia and great prostration of strength. From this time the dysphagia and dyspnoea gradually became worse; and on the 7th of June, in one of the attacks of suffocating cough, the patient died. At no time during her illness had there been any paralysis of the extremities, and her intellectual faculties remained clear throughout her whole illness.

Unfortunately no autopsy could be obtained; but looking at all the circumstances of the case, the writer thought there was good reason to believe that the ninth nerve on the right side was involved in a secondary cancerous tumor, such tumor being situated either within the cranium or at the upper part of the neck, and pressing upon the right hypoglossal nerve, and more or less implicating the pneumogastric and glasso-pharyngeal nerves as well.

The writer then proceeded to compare with this case two other instances of well-marked unilateral atrophy of the tongue: the one related by Dupuytren in the "*Leçons Orales*" (lecture on Hydatid Tumors); the other by Sir James Paget, in the third volume of the *Transactions of the Clinical Society*. The experience of Romberg and of Bidder was adduced to show that this remarkable condition of the tongue may be produced by a lesion of the ninth nerve, and to establish the same point the author related an experiment that he had made. On October 25th, he divided the right hypoglossal nerve in a rabbit, and took out a piece about a quarter of an inch in length. Immediately after

¹ Abstract of a paper read at a Meeting of the Royal Medical and Chirurgical Society, November 28th, 1871.

the operation, and during the whole time that the animal was under observation, the tongue was strongly protruded to the right side. On November 27th the rabbit was killed. It was found that the nerve had united by a soft gelatinous and highly vascular substance, of about twice the ordinary calibre of the nerve. The right side of the tongue, along its posterior half, was slightly wasted and flattened.

The preparation was exhibited, and an outline sketch, illustrating the case which had been related, also accompanied the paper.

ART. 169.—*On Cancer of the Sublingual Glands.*¹

By M. VERNEUIL.

(*Gazette Hebdomadaire*, No. 41, 1871.)

"I am about to direct your attention to a frequent and grave affection: epithelioma, or cancer of the sublingual glands. The subjects of this affection generally come to us with ulcerations which have been cauterized and tormented for several months, and in such a manner as to render surgical intervention difficult. Authors scarcely allude to cancer of the sublingual glands. I have seen a dozen cases of this affection. The affection is generally presented in the form of sharply-cut linear ulceration at the floor of the mouth. The base is indurated; the ulceration extends sometimes towards the lingual mucous membrane, sometimes towards the periosteum. Difficulty in deglutition, salivation, pain radiating to the neighboring parts, even to the ear, are the chief symptoms; this extension of the pain is probably due to exposure of the inferior maxillary nerve. All kinds of caustic agents have been applied to these ulcerations. The diagnosis is easy. Aphthous or syphilitic ulcerations do not occupy this position, and have not indurated bases.

"I have had occasion to study this affection anatomically, and have observed that the seat of the disease is the sublingual glands; the acini are increased to thrice their normal size, the epithelium is altered, all the cells present large nuclei, each containing three bright nucleoli. The prognosis is extremely serious. I have seen recoveries from epithelioma of the tongue and of the inner surfaces of the cheeks, but when the sublingual gland is the seat of the disease relapse occurs rapidly after operation, even before the cicatrization of the wound. This is one of the most frequently fatal forms of epithelioma. I have performed several operations; have enucleated the tumor and removed it in different ways by means of the *écraseur*, but all to no purpose; relapses were speedy and death rapid."

ART. 170.—*A Case of Stricture of the Œsophagus.*²

By M. DEMARQUAY.

(*Gazette Hebdomadaire*, No. 4, 1872.)

"I have the honor to present to the Society a preparation taken from a patient upon whom I had performed catheterization of the œsophagus. The patient was a youth aged fifteen years, who, in the month of May, 1871, drank by inadvertency a glassful of solution of potash. This was vomited, but dysphagia shortly afterwards occurred and increased to such a degree that the patient was not able to drink. I saw the patient three months after the accident; I then passed an ordinary No. 10 catheter, by means of which I could supply him with fluid nutriment; I afterwards proceeded to dilate. In the course of a short time the patient was able to eat and drink. He did not return to me for some time, but when he did he could no longer swallow. I attempted to pass some olivary dilators, but could not get the smallest of these

¹ Communicated to the Société de Chirurgie of Paris,

² Ibid.

through the structure. This was on the 8th of September. Whilst I was attempting to pass one of these instruments the patient suffered much pain; he was able to drink, however, and declared that he could feel the fluid passing into his stomach. In the evening he was feverish, and I discovered that he had pleurisy. The patient was treated by M. Cazalis, and died on October 4th. One sees from the preparation that there is a perforation of the œsophagus communicating with the focus of an extensive purulent pleurisy. The communication is large, and receives a large sound. I believe that in this case there was softening of the œsophagus so advanced that at the least contact the walls were ruptured. In a case of cancerous stricture of the œsophagus the patient after catheterism drank a little and then had a violent fit of coughing; here a communication had been established between the œsophagus and one of the bronchi. Since my experience in these cases I always exercise the greatest prudence in catheterism of the œsophagus."

ART. 171.—A Case of Median Fracture of the Inferior Maxillary Bone cured by Osseous Suture.¹

By M. POLAILLON.

(*Gazette Hebdomadaire*, No. 45, 1871.)

A man, aged twenty-nine years fell from a dray of which he had charge. A fracture of the lower jaw, situated between the first and second incisor teeth on the left side, was the result of this accident. The direction of this fracture was vertical. The gums and the buccal mucous membrane were much torn. The fragments, separated by an interval of about one centimetre, were very movable. Ligation of the teeth, and the application of a gutta-percha splint moulded over the alveolar border were carried out, but with no success. On October 11, suture of the inferior maxilla was practised in the following manner:—

"At a point about a centimetre externally to the fracture the left fragment was pierced by a perforator, at the end of which was a hole through which a silver wire could be easily passed. When the perforator had passed beyond the posterior surface of the maxillary bone, the wire was passed through the hole, and then brought forwards by the needle to the front of the jaw. The right fragment was then perforated in a similar manner. The two fragments could then be brought into exact coaptation by means of the wire suture which formed a loop behind them. The anterior surface of the gum was then covered by a small plate of gutta-percha, over which the two ends of the suture were twisted. The fracture was maintained in a state of perfect reduction. The maxillary bone was perforated near the extremities of the dental fangs and in intervals between these. This operation was not followed by any bad symptom. At the end of twenty-seven days the fracture was consolidated. The suture was withdrawn on the 7th of November.

ART. 172.—Resection of the Œsophagus.

By Professor BILLROTH.

(*The Lancet*, January 6.)

In the current number of Langenbeck's "Archiv," Professor Billroth, of Vienna, contributes a most interesting and suggestive paper bearing the title, "Ueber die Resection des Œsophagus." He states that some time ago, after a post-mortem examination of his first patient affected with carcinoma of the œsophagus, the possibility suggested itself of making a resection of this part of the alimentary tube. The fact that the lymphatic glands in the neighborhood of the diseased part are not generally affected, and the partial success which

¹ Communicated to the Société de Chirurgie of Paris.

had hitherto attended the operation of œsophagotomy in this disease, together with the analogy of external urethrotomy in cases of gangrene or ulceration of the urethra, seemed to lend support to such an idea. The passing, moreover, of bougies through cicatricial tissue was far preferable to the manipulation of such instruments in a tube with ulcerated and weakened walls.

On April 21 of last year, a large dog was put under the influence of chloroform, and a piece, about an inch and a half in length, was cut out of the whole circumference of the œsophagus. The lower end of the divided tube was then fastened by a couple of sutures to the skin at the margin of the external wound. Up to the 26th of the same month the animal was fed with milk through a tube passed into the wound, but on and after this date the tube was passed *viâ* the mouth. A week after the operation the sutures were removed. By the end of June, the fistulous opening had completely closed, and the process of healing would have been quicker if it had not been that the dog, like human patients, dissatisfied with "milk diet," purloined the more solid food of neighboring victims to science. After the closure of the œsophageal fistula, which took place at the end of June, the tube was daily dilated by a bougie of the diameter of a large index finger. After the healing of the wound the dog was in capital condition, eating meat, potatoes, etc., but the variety of the fare was not allowed to extend to bones. On July 26 the animal was killed with cyanide of potassium; and all that was found as a trace of the operation was an annular scar, scarcely half a line in width, and, moreover, easily dilatable.

ART. 173.—*Gastrotomy in Cases of Strictured Œsophagus.*¹

By THOMAS SMITH, F.R.C.S., and WILLIAM MACCORMAC, F.R.C.S.

(*Medical Times and Gazette*, June 22.)

Mr. Thomas Smith read a paper on a case of Strictured Œsophagus, for which gastrotomy was performed. The patient, A. B., aged thirty-eight, was under Dr. Black's care at St. Bartholomew's Hospital. He had suffered from difficulty in swallowing for eight months. For a fortnight before admission he could take no solids, and for a week (as he said) no food of any kind. Treatment by bougies proved of no avail, as nothing would pass the stricture. There was no external evidence of disease of any kind; no swelling, tenderness, or pain; no expectoration of blood or matter. On March 21, 1872, gastrotomy was performed, and an India-rubber tube was introduced. Through this tube he was fed. The patient went on well for four days, and then was troubled by cough, which seemed to set up peritonitis, of which he died at the end of a week. On examination after death, the cause of obstruction was found to be a ring of epithelial cancer surrounding the œsophagus opposite the bifurcation of the trachea, producing complete obstruction, and involving the pneumogastric nerves. The stomach was firmly adherent to the skin and to the parietal peritoneum. Death was caused by peritonitis. Mr. Smith remarked that in this case the operation had been done under circumstances as favorable as were ever likely again to occur. The patient was not excessively exhausted. There was nothing in the local disease to have caused, or even accelerated his death at the time when that occurred. The operation was easily performed. There was no failure in the process of union afterwards, and no hindrance to the administration of food; yet the case terminated as have all cases of gastrotomy for obstruction of the œsophagus. The author stated that there were now twelve recorded cases, all of which had ended fatally; and he expressed an opinion that, with our present experience of the dangers of the operation, it ought not to be undertaken when death is imminent from any other cause than starvation.

Mr. MacCormac gave the particulars of two cases in which gastrotomy had been recently performed in St. Thomas's Hospital for œsophageal obstruction. In the first case, the patient was operated on by the author on March

¹ Read at a Meeting of the Clinical Society of London, May 24.

19. He survived forty-five hours. In the other, Mr. Le Gros Clark operated on May 7, the patient living for six days afterwards. H. S., aged forty, was admitted to St. Thomas's Hospital under the care of Dr. Clapton. Up till the commencement of the present illness, about twelve months before, he had enjoyed excellent health. No history of syphilis or of cancer was obtained. One day he suddenly experienced difficulty in swallowing. This difficulty, with periodical remissions, steadily increased until he sought hospital treatment. On admission, he was weak, emaciated, and scarcely able to swallow even small quantities of fluid. He did not complain of pain except when trying to swallow food, but the effort to do so always induced most distressing retching and cough. There had never been either pus or blood in the discharges. After consultation, it was deemed expedient to try to feed the man through an artificial opening made in the stomach, through the abdominal wall. Accordingly, at ten o'clock on March 19, Mr. MacCormac made an opening into the stomach, securing the cut edges of the viscus to the wound in the abdominal parietes by means of interrupted suture. The patient bore the operation well. There was no shock, and the vomiting and cough completely disappeared, giving him very marked relief. Food was introduced into the stomach by an India-rubber tube with a funnel, which allowed the fluid to gravitate into the organ. Surgical interference came too late, however, to make any material change in the patient's condition. It did not, perhaps, hasten his end; but he became weaker, and died on May 21, forty-five hours after the operation. An examination after death showed that a cancerous stricture existed low down in the œsophagus, and that by the spread of the disease the lung, in which was found a gangrenous abscess cavity, had become seriously implicated. The edges of the stomach were glued by lymph to the parietes, and in the abdominal cavity there was no trace of peritonitis. In Mr. Clark's patient the antecedent history was very similar to that of the last. Difficulty of swallowing suddenly appeared during eating, and this steadily increased until he came to the hospital, when he finally became unable to swallow almost anything. Some attempts were unsuccessfully made in each case to pass a small elastic bougie. After consultation, the operation of gastrotomy was performed by Mr. Clark on May 7. Food was first introduced into the stomach thirty hours after the operation. The patient experienced great relief for four days by reason of the cough and efforts to vomit completely ceasing; but then the cough returned, the adhesions partly gave way, and he died six days after the operation. Very extensive epithelial disease was found in the œsophagus, and an ulcerated opening had been formed between it and the lower part of the trachea. There was some peritonitis, but it was limited to the neighborhood of the wound. Mr. MacCormac considered that the operation itself was not necessarily dangerous, and that the relief from the great distress, inducing coughing and retching, caused by futile efforts to swallow, which was observed in a marked degree to follow the operation in both these cases, was encouraging. Even although the operation only prolonged life a little, it seemed possible to give great comfort by it, just as in a similar way the operation of colotomy gave great relief in cancerous disease of the rectum. He did not consider that surgeons were as yet quite in a position to decide whether or not gastrotomy was a proper operation to perform for impassable stricture of the œsophagus. He thought further experience, especially of operations performed in an earlier period of the disease, desirable, and would not on another occasion hesitate to perform gastrotomy in a suitable case.

ART. 174.—On Concussion.

By JOHN ASHHURST, Jun., M.D., Surgeon to the Episcopal Hospital, Philadelphia.

("Principles and Practice of Surgery," 8vo. pp. 1011; Philadelphia, 1871.)

In reference to concussion, Dr. Ashhurst says:—

"Every case of concussion is, I believe, accompanied by *shock*, and in many instances the symptoms of the latter condition alone can be recognized. . . .

Even in the intermediate cases, which are often spoken of as typical instances of concussion, though, as a matter of convenience, we may trace their clinical history, and divide it into stages, we cannot point to any symptoms which definitely characterize the lesions of concussion, apart from those of other cerebral injuries. Indeed it would be better, I think, if we could dispense altogether with the term concussion as denoting a *condition*, and look upon it as merely indicating the *cause* of what have been described as *concussion lesions*—viz., *cerebral contusion, laceration, extravasation*. . . . I regret that I cannot agree with those surgeons who consider the diagnostic marks between compression and concussion to be plain and easily recognizable. . . . Though in certain cases we can say without hesitation, in view of the one-sided paralysis, profound coma, and other symptoms mentioned, this is compression or that is concussion, there are other cases in which it is impossible to draw such a distinction; compression may disappear spontaneously, leaving concussion, while concussion, by a continuance of intracranial hemorrhage, may end in fatal compression."

Of its treatment the author writes:—

"As a matter of fact it is very seldom indeed that a case of concussion requires any stimulants at all. . . . [After reaction has taken place], rest, both mechanical and physiological, should still be enforced; and if the patient be restless, the surgeon need not fear to give opium. I am aware that there is a good deal of difference of opinion as to the propriety of administering opium in injuries of the head, but surely there is nothing to contra-indicate it in what we know of the pathology of these cases, while its soothing and calming effect is exactly what is required."

He "would restrict the use of the trephine within very narrow limits; it is not to be used with the idea of relieving compression, nor with the idea that there is any special virtue in the operation to prevent encephalitis. The trephine should be used merely as Hey's saw is used, mechanically, to enlarge an opening which would be otherwise too small to allow the surgeon to carry out plain therapeutic indications."

ART. 175.—*Complete Recovery after Removal of the Body of a Cervical Vertebra.*¹

By WILLIAM OGLE, M.D., F.R.C.P.

(*British Medical Journal*, Jan. 20.)

In this paper a case was narrated, of which the following were the chief points. A man, after suffering for some months from sore throat, became an out-patient of St. George's Hospital. It was found on examination that some bone was exposed at the back of the pharynx; but the patient suffered so little inconvenience from this, that he could not be persuaded to become an in-patient. The man got into the habit of moving the exposed bone with his fingers, and at last loosened and removed it himself. On maceration, the piece thus removed was found to consist of the body of one of the cervical vertebræ and a small portion of the body of a second one. After remaining for some months as an out-patient, the man was persuaded to enter the hospital. He was placed on his back, and his head fixed; and remained in this position six months. During this time he expectorated numerous spicules of bone, and what appeared to be portions of fibro-cartilage. The lesion eventually healed completely; and the man at the present time—two years since the lesion—is able to occupy himself with the heaviest farm labor, and to amuse himself with field sports. There is no visible deformity of the neck, nor any other sign of what has occurred except a slight stiffness in rotating the head. The piece of bone was exhibited.

¹ Read at a Meeting of the Royal Medical and Chirurgical Society, January 9th.

(B) CONCERNING THE TRUNK.

ART. 176.—*On the Treatment of Hydrarthrosis by Aspiration.*

By Dr. DIEULAFOY.

(Gazette Hebdomadaire, No. 41, 1871.)

"*The Operation.*—At the time of withdrawing by aspiration the fluid contained in the articulation, the affected leg should be extended, since in this position the articular surfaces of the femur and tibia are applied to each other over a considerable extent, and the fluid is forced forwards so as to render prominent the patella and the tendon of the quadriceps. It is a good plan to surround the articulation with a caoutchouc band, which possesses the advantage of exercising uniform and continuous compression during the discharge of the fluid. The point of puncture will vary according to the inclination of the surgeon: I prefer the superior cul-de-sac of the synovial membrane at the level of the upper extremity of the patella, and about two centimetres externally to this bone.

"To perform the puncture the surgeon should make use of one of the hollow needles of the aspirator. The No. 1 needle, the diameter of which is three-fourths of a millimetre, seems to me to be too fine, although it has often been utilized with advantage. I prefer the No. 2 needle, the diameter of which is one and a quarter millimetre. This needle, furnished with two openings near its extremity, fulfils every condition and has never given rise to any accident.

"The aspirator having been emptied of air, the needle is put into communication with it by means of a tube of caoutchouc, and is then introduced into the tissue at the point fixed upon for the puncture. The stopcock corresponding to the aspirator is then turned and the needle is carried on until a jet of fluid appearing within the glass pump indicates that it has penetrated the articular cavity. The fluid is then withdrawn to the last drop. It is useless to compress the joint, and this manœuvre would also irritate the serous membrane by multiplying its points of contact with the needle.

"As soon as the fluid has been evacuated the needle is withdrawn and the puncture covered, though this proceeding is not absolutely necessary, by a small piece of goldbeater's skin and a few drops of collodion.

"Now it is necessary to make compression, and very special care should be taken in this part of the treatment, as it is one of the essential elements of success. The knee is to be surrounded with a thin layer of wadding, over which exert energetic compression with a bandage. But this alone will not suffice; it is necessary to surround the foot and the whole leg with a roller, in order to guard against œdema. The leg should be somewhat inclined, so that the foot may be the most elevated part.

"Forty-eight hours after the puncture the dressing is to be removed so that the surgeon may observe what has occurred. With regard to this point there are two classes of cases: in one the fluid does not accumulate, or at least it collects again in very small quantities; the compression should then be reapplied; but if, on the contrary, the effusion is very great, aspiration should be again performed and compression applied as before. On the following day the same manœuvre is to be recommenced, and so on for several days until the time of cure. The introduction of the needle causes very little pain; and it is a very easy matter to do away with this by producing cold anæsthesia with Richardson's ether-spray apparatus, or by applying a mixture of salt and ice.

"*Value and critical estimate of the proceeding.*—Is the treatment of hydrarthrosis by aspiration superior to other proceedings? Has it inconveniences, has it advantages? Such are the questions which we ought to ask ourselves. I believe that I am in a position to affirm that the operation such as I have described is entirely free from danger. I have seen it practised, and have practised it myself, on hundreds of occasions in the knee-joint, and have never noticed the slightest accident. There is no pain if local anæsthesia be applied to the seat of puncture; the operation is as simple and as easy as the prick

made with the needle of an hypodermic syringe. The introduction of air into the articulation is impossible.

"It remains to be found out whether this plan of treatment has any advantages. In painful hydrarthrosis and those which occur very rapidly after chilling or in acute articular rheumatism, the pain, which is sometimes extremely acute, ceases immediately on evacuation of the fluid; the movements of the joint which previously were difficult, can now be performed without any trouble. Such results are not to be obtained so readily from the application of iodine and blisters.

"With regard to the direction of the treatment, this is variable according to the causes which have given rise to the hydrarthrosis and according to the individuals who are thus affected. This question has not yet been well elucidated, and it is hardly possible to say from the examination of a pathological fluid taken from a serous cavity, whether there is a more or less marked tendency for the effusion to be reproduced. Whether the fluid be deficient in coagulable material, like that of ascites or hydrocephalus, whether it be very fibrinous as in hydrarthrosis, or whether it be more or less rich in leucocytes, is of little importance: these are, in the reproduction of pathological fluids, conditions which escape us, and I think it better rather to abstain than to hazard a classification which as yet reposes upon a too uncertain basis. The notions which we hold concerning the tenacity of the effusion are very indistinct, and if we have admitted three groups relating to the variable duration of hydrarthrosis, it is only for the purpose of establishing facts and not of pretending to seek their interpretation. One may, it is true, by taking an average find out with regard to the duration of the affection, the advantages of aspiration over other methods; but this proceeding, rigorous in the exact sciences, seems to me to be hardly applicable in medicine, for one is compelled to associate cases which are too dissimilar.

"It has been demonstrated by experience that a certain number of painful voluminous hydrarthroses of several days' duration, rapidly yield after one or two aspirations followed by compression; under other circumstances the treatment has lasted for twelve or fifteen days. There is here, therefore, a marked difference from the methods of treatment in ordinary use which have to be continued for several weeks.

"I hold then that, except under special circumstances, one ought, in the treatment of hydrarthrosis, to abandon the following different medications, none of which enjoy any great favor: 1. Calomel given to the extent of salivation—a fruitful source of stomatitis and a treatment poor in good results; 2. Emetics in large doses, recommended by M. Gimelle; 3. The local application of iodine and of blisters.

"It seems to me that aspiration or repeated aspirations followed by compression ought to be preferred to these different methods. When fluid, whatever may be its nature, accumulates in a serous cavity and when this cavity is accessible, without causing danger to the patient, to our means of investigation, our first care ought to be to withdraw this fluid. If it be renewed it should be withdrawn again and several more times if it be necessary, *in order to exhaust the serous membrane by a method quite mechanical and altogether harmless, before thinking of modifying the secretions by irritating and sometimes formidable agents.* And if aspiration within the limits I have indicated does not suffice, I hold that it will be necessary, without any intermediate action, to have recourse to some irritating injection."

ART. 177.—*On Aspiration in the Reduction of Hernia.*

By M. DEMARQUAY.

(*Medical Times and Gazette*, June 1.)

At the meeting of the Académie de Médecine on May 21, M. Demarquay presented a man, twenty-one years of age, in whom he had reduced a strangulated congenital inguinal hernia by the aid of aspiration. On May 5th a tumor

appeared in the left groin, accompanied by severe pains and vomiting, which persisted next day. At the end of twenty-four hours he was taken to the Paris *Maison de Santé*, where the taxis was employed without success. Ice was applied during the next twelve hours, when M. Demarquay saw the patient. His features had undergone great change, and fever was set up. A congenital, elongated, voluminous inguinal hernia was found to exist, and M. Demarquay paid the more attention to other measures inasmuch as he had never succeeded in curing this description of hernia by operation. He applied carefully the taxis, while the patient was put into a deep sleep, with no effect, and he determined to try the effect of removing the intestinal liquids and gases by means of aspiration. A fine trocar was passed into the centre of the tumor, and, by means of Potain's aspirator, about 120 grammes of intestinal liquid were drawn into the recipient. The tumor subsided completely, and the trocar having been removed, some minutes were allowed to elapse without touching the tumor, in order to observe whether new liquids or gases would enter the strangulated intestine. No renewal of the tumefaction took place, and very slight pressure upwards sufficed to procure the return of the intestine into the cavity of the abdomen. The patient was kept quiet, and on low diet, fractional doses of opium being administered. No ill consequences followed. The case M. Demarquay regards as striking, and he proposes to apply this new mode of treatment—1. In all congenital hernias and to recent hernias which become strangulated at the time of their formation. 2. To old hernias which were quite reducible a few days prior to strangulation, and in large umbilical hernias that have been recently strangulated. 3. Aspiration, which has for its object facilitating the employment of the taxis, should only be employed at an early period, when one can be well-nigh certain of returning into the abdomen the intestine in an unaltered state and capable of resuming its functions.

ART. 178.—*On Wounds of the Liver terminating in Recovery.*

(*Gazette Médicale de Paris.*)

Although in the majority of instances wounds of the liver are serious, and although those injuries are considered so by the majority of authors, this is not always the case. To be convinced, it will suffice to glance over the following *résumé* of some reports made by French surgeons.

The first occurred in the practice of M. Desprès. After the battle of Sedan this surgeon received into his ambulance a soldier, whose right hypochondrium region had been traversed from back to front by a bullet. The projectile had entered at the renal region; then continuing its course it arrived under the integument corresponding to the front of the ninth rib.

A few days later this part presented a small tumor, which soon became red and fluctuating, and on opening this a bullet was withdrawn, some pieces of cloth, and a small buckle. A fistulous tract remained for ten days, after which the whole wound closed, and the patient was discharged without having presented any other symptom.

M. Verneuil reports a case of the like kind. In this instance, the liver had been pierced through from left to right, from the left to the right hypochondrium. The patient was a young man, who in an attack of delirium had applied a revolver to his left side. On his admission into the hospital an orifice was observed on the left side, and at a diametrically opposite point of the right chest was developed a blood tumor. A minute examination of the chest did not reveal any symptoms pointing to lesion of the respiratory organs. There was no expectoration of blood, nor any secondary pleurisy. On the fourth day there was jaundice, which increased in intensity until it reached its maximum on the tenth day. The man was as yellow as an orange. After the tenth day, the appetite returned, and the general condition became so satisfactory that the patient in the course of a few days was discharged at his own request.

M. Boinet states that he has had occasion to see two cases of complete recovery, without any bad symptoms, after stabbing wounds.

We would finally recall the many instances of puncture of the liver performed in the treatment of hepatic hydatid cysts, and even for pleuritic effusion, in which no bad symptom was manifested. This proves that the gravity of wounds of the liver may have been exaggerated, and that it is necessary for us to investigate those organic conditions, which, in a certain number of cases, determine this freedom from harm.

ART. 179.—*Wound of the Spinal Cord in the Dorsal Region; Paralysis of Motion more Pronounced on the Left Side; Anæsthesia on the Right Side; Hyperæsthesia on the Left Side; Unilateral Slough on the Right Bullock; Spinal Arthropathy of the Left Knee.*

By M. VIGUES.

(*Gazette Médicale de Paris*, No. 1, 1871.)

"On February 4th, 1850, A. C., aged twenty-eight years, was admitted into the Saint Louis Hospital, under the care of M. Nélaton. This patient had received a sword-wound at the back of the thorax on the right side, between the ninth and tenth dorsal vertebrae, and at a point about thirty-four centimetres externally to the line of the vertebral spines. The sword had penetrated to an extent of more than six centimetres, and had been directed upwards and inwards towards the medullary canal. The wounded man was not able to get up.

"The following was the state of the patient when first visited: He complained of violent pains in the lower limbs; the left inferior extremity presented an almost complete paralysis of motion; some slight movements only could be made out at ends of the toes; the sensibility, however, of this was much exaggerated, and the slightest contact caused violent pains. This hyperæsthesia was then arrested almost at the level of the iliac crest, but in the course of a few hours invaded the hypochondrium and the left part of the hypogastrium. On the left side also the thermic sensibility was equally perverted. A body heated to 30° C., gave to the patient the sensation of burning, whilst a compress dipped in water of the temperature of the ward produced a sensation of very intense cold. Tickling was very painful.

"In the right abdominal limb the phenomena were quite different. The movements which in this part had been totally impossible were somewhat restored; sensibility on contact, though somewhat less, still existed; sensibility to pain had ceased. Thermic sensibility was also abolished; the patient was conscious of the contact of the body, but could judge neither of the temperature nor of the degree of humidity or dryness of this body. Tickling gave but a sensation of simple contact.

"After the wounding, the patient had complete retention of urine and of fecal matter.

"On the evening of February 6th, all the symptoms commenced to subside. The movements were always less pronounced on the left than on the right side; the hyperæsthesia disappeared from the left gluteal and lumbar regions. On the right side the patient could feel the pricking of a pin, but could not tell the seat. He was soon able to pass his water himself. The retention of fecal matter gave way to incontinence.

"On February 17th it was remarked that the left lower limb, which since the wounding had been more sensible than in the normal condition, *had increased in size*, and that the skin was rough and dry. Within the articulation of the knee a sufficiently considerable quantity of fluid had been collected to elevate the patella for about a centimetre above the condyles.

"On February 20th there was observed, on the right side of the sacrum and in a corresponding part of the buttock, a sore, which had not been complained of or felt by the patient. Over a space of about seven or eight centimetres the epidermis alone was detached, leaving exposed the dermis, which was ulcerated at several spots.

"On February 25th the sore had not extended; motion and sensibility gradually returned, and on March 20th the stools, for the first time after the

wounding, were passed voluntarily. Shortly afterwards the patient was able to sit, to get out of bed, and to walk about with the help of crutches. He left the hospital on June 15th, after a sojourn of four months and a half. The sensibility in the right inferior limb had not returned to its normal condition; the amelioration on the left side still persisted. The patient lived for two years afterwards, and had regained his former condition without preserving any trace of his wound."

MM. Joffroy and Solomon, in some remarks upon this case, state that here, as likewise in a case observed by themselves, there was incomplete section of the cord, involving more particularly the left half; paralysis of movement in the two lower limbs, but affecting more especially the left; disturbances of sensibility in the inferior limbs, consisting chiefly in an anæsthesia on the right side, and hyperæsthesia on the left side. Finally, simultaneous development at the third week after the commencement of an unilateral sore on the right buttock, and arthropathy of the left knee. So great a resemblance in all the details of two cases of this kind is undoubtedly a powerful argument in favor of the influence exercised by lesion of the cord on the development of the sore and of the arthropathy of the knee. It may be called to mind that M. Chariot has established the tolerably frequent existence of an arthropathy of this nature in sclerosis of the posterior cords, and that in one of these cases, where the left shoulder was the seat of this complication, examination of the cord revealed a morbid change in the anterior horn in the gray substance corresponding to the cervical region.

ART. 180.—*Treatment of Gonorrhœa.*

By J. L. MILTON, M.R.C.S., Surgeon to St. John's Hospital for Diseases of the Skin.

In an essay on the pathology and treatment of gonorrhœa, Mr. Milton divides all cases into two classes—those which do and those which do not admit of a plan of abortive treatment. Those adapted for the abortive plans of treatment are: 1. Cases when the patients present themselves before great pain and running have set in. 2. Those who have had gonorrhœa previously, and in whom the present attack does not appear to be very severe. 3. Those cases where the patient is desirous of an immediate cure at any price. In following out this plan, it is indispensably necessary that the patient should be able to rest for the entire day after. The patient should make water, and should then be injected with a five-grain solution of nitrate of silver, by means of a syringe with an electro-gilded nozzle an inch and a half long.

If no smarting be felt, a ten-grained solution may be injected. The penis may then be bathed in hot water, or a hot bath taken to relieve pain and irritation. Four grains of calomel are to be taken, followed by a seidlitz powder, or citrate of magnesia every two hours, till several loose stools are obtained, and no food should be allowed except a little warm tea or gruel. After every stool the patient should inject with a solution of sulphate of zinc containing from three to five grains in the ounce, and hot fomentations should be systematically repeated. The next day the discharge is usually thin and small in quantity, and in a day or two will have quite disappeared.

The abortive plan of treatment is applicable to but very few cases, and Mr. Milton proposes another plan, which he considers to be the best adapted for all ordinary cases. This consists in the administration of the acetate of potash in combination with the spirit of nitric ether. The best proportions seem to be five drachms of acetate of potash with three drachms of spirit of nitre, and half an ounce of compound spirit of juniper or two or three drachms of spirit of nutmeg, in a six-ounce mixture. In more severe cases the chlorate of potash may be added, and in those of unusual severity he would begin with it at once. With these he gives a calomel, colocynth, and hyoscyamus pill, or the following: Pil. aloes et assafetidæ, gr. j; calomel, gr. vj; pqdophylli resinæ, gr. ij; ol. cinnamomi. M. Ft. pil. xij. Sumat ij hora decub. Under this treatment the discharge soon becomes materially diminished, and in forty-eight hours is

thinner, less colored, and more mucous, and these effects are produced with equal rapidity in long-standing and in recent cases, and in women as well as in men.

ART. 181.—*On the Treatment of Bubo.*

By Professor ZEISSL.

(*Medical Times and Gazette*, May 4, 1872.)

In a paper published in the *Wiener Med. Wochenschrift*, March 9, Professor Zeissl, of Vienna, describes the great advantages which he has derived from what he calls "the abortive and methodical treatment" of bubo and other acute and subacute glandular enlargements of the groin and thigh. "Every one," he observes, "who has had much to do with such is well aware of the difficulties and sometimes even dangers which they may give rise to, and cannot but be anxious for a means which may prevent their suppuration and its tedious consequences." Engaged in Hebra's division of the hospital for more than twenty years, Dr. Zeissl was always on the look-out for some such means, and had often, both in private and hospital practice, derived remarkable benefit from the application of the acetate of lead, as recommended by Behrend and Cooper. In 1869 he was appointed to take charge of the syphilitic wards in the hospital, some of which had a bad reputation (of late much redeemed) for their sanitary conditions. He soon found that such conditions told sadly on open buboes, which became frightfully gangrenous. The proximity of these wards to the dead-house seemed one cause of their insalubrity; and in order to avoid the contact of wounded surfaces with the infected atmosphere, the experiment was tried of opening and discharging buboes under water, and then closing them with a gypsum bandage. In some cases primary union took place, but in many others the cavity filled again, and the skin covering the abscess became so thinned, in spite of all preventive measures, that at last it had to be opened over a considerable extent, either by cutting instruments or caustics. Every attention to cleanliness and ventilation, etc., the application of carbolic acid according to Lister's and other plans, all failed to secure the prompt healing of such ulcers.

The author undertook no operation upon these inflamed glands without fear and trembling, so that at last he resolved to treat the buboes with lead, which he had found so useful in private practice, and only opening them quite exceptionally. This treatment has now been pursued during two years in the following manner: When, on first seeing the patient, hope may still be entertained of preserving the skin intact, it is carefully cleansed from all adhering dirt and plaster, and depilated. The patient then goes to bed, and a compress which has been soaked in a solution of basic acetate of lead is applied to the tumor, wetting it as often as it becomes dry. Even at the end of three or four days the skin covering the enlarged gland feels thicker and firmer—tanned, as it were. The fluctuation, which on close examination was at first perceived, either has gradually disappeared altogether or become much less perceptible; and on pressing the tumor with the fingers it is found already to impart a doughy feeling. If the fluctuation on the commencement of the treatment is very plain, or becomes so, a puncture in a perpendicular direction by a pointed bistoury should be made into the thinnest portion of the skin, taking care that the puncture does not become an incision, and is only large enough to secure the gradual and continuous discharge of the pus, which should be aided by moderately firm pressure by means of a compress soaked in the lead, and over which a roller is applied. The bandage also brings the excavated skin into contact with the underlying parts, and favors their union. The replacement of the purulent contents which first flow out after a few days' application of the bandage, by a more serous lymph-like fluid, is always a favorable circumstance. Care must be taken to prevent any of the linen used in the dressing entering into the aperture, as repeated irritation of this kind may easily convert the simple puncture into an ulcer. If the swelling consists of the (so-called)

multiple bubo, and a spontaneous rupture has already taken place at one or more points, the following iodine plaster may be advantageously substituted for the lead compress: Plumb. iod. ʒj; ext. bellad. ʒij; emp. diach. c. ʒj; ung. elemi q. s. ut f. empl. molle. As long as only a thin lymph-like fluid is discharged through the puncture or spontaneous apertures, and no symptoms of renewed inflammatory action are present, and still more if erysipelas be prevalent, we should abstain from any removal of the skin. But if one or more sources of pus lie deeply under the fascia superficialis, the cavity of the abscess should be laid open, employing the Vienna paste or the knife, with the usual precautions. In many cases a simple incision of the skin will suffice; and the author has met with others in which the excavated skin occupied several inches in extent, conveying the impression that it must perish, and yet the lead application has preserved it and led to its solidification.

In this way, in now more than 100 cases of indolent or acute buboes, whether arising from infection or from mere catarrh, the author has succeeded in preventing suppuration and in obtaining, very often without any puncture, absorption of their contents in the course of from six to ten weeks. Gangrenous glandular tumors are now of the rarest occurrence in the hospital, if they have not been admitted when already in that state. Just as rare now are those deep ill-conditioned sores, burrowing under fasciæ and sheaths of vessels, with all their dangerous consequences. The dressers and nurses now have to spend much less time over these cases. Professor Zeissl, therefore, is very anxious to make his mode of treatment more known—not that he believes he has made any discovery, for the same means have been employed by Wallace, Cooper, and others. One peculiarity he claims is that of not confining the treatment to mere indolent bubo, but of employing it also in the acute and subacute venereal bubo.

ART. 182.—*Treatment of Bubo.*

By W. H. McNAMARA, M.D., Assistant-Surgeon, 10th M.L.I.

(*Indian Medical Gazette*, August 1, 1871.)

The importance of this subject will be readily admitted by any surgeon who has had much experience in military practice.

Patients are seen in regimental hospitals lying on their backs for months with suppurating bubo. It is remarkable to what a state of ill health these men are reduced by confinement and slow suppuration.

When an acute bubo is opened in the usual way, by a free incision, granulations spring up very slowly, principally from the sides of the incision, and they are usually pale, flabby, and unhealthy; granulation from the bottom is slow, though all kinds of stimulating applications are applied. In a situation where the skin is so movable as in the groin, the granulations of opposite sides of the wound never adhere; the consequence is that after prolonged and tedious treatment the wound is covered over by weak and unhealthy epidermis, resembling the false membrane of a sinus, leaving a sulcus which is liable to break out again when any prolonged exertion, such as a march, is performed. To remedy this state of affairs, Dr. McNamara has for some time practised the opening of bubo by means of potassa fusa.

The bubo is covered over with several layers of sticking-plaster, in which a hole, *half* the size of the intended opening, had been previously made; potassa fusa is now rubbed on the exposed skin, through the hole; sticking-plaster is then put over the hole, and a full dose of opium given. Very little irritation is produced, and the patient expresses his satisfaction that the knife has not been used. In a short time a black *eschar* is formed, which is removed in a few days by poultices, and a healthy ulcer, easily healed by the usual treatment, is the result.

Chronic bubo, when opened by the knife, is even more troublesome than the acute disease, on account of the well-known thin blue skin which surrounds the opening and prevents healthy action. It is usually recommended to get

rid of this by means of potassa fusa, or some other caustic, but if potassa fusa is used, as described above, in opening the bubo, this unhealthy skin does not appear.

In some cases of chronic, painless, indolent bubo, small suppurating centres occur without interfering much with the vitality of the skin which covers them. In these cases an apparatus, which lets out the matter without letting in the air, has been employed with very good effect.

As instruments are not always at hand, it occurred to the author that by running a lancet under the skin, commencing a few lines from the seat of supuration into the abscess, squeezing out the matter, and applying a pad with a bandage, a similar result would ensue. Dr. McNamara has practised this method in several instances, with the effect of curing the patient in a few days.

ART. 183.—*Extraordinary Case of Hydrocele.*

By JOHN G. MEACHEM, M.D.

(*New York Medical Journal*, April.)

Dr. Meachem relates an instance of a hydrocele which reached to within four inches of the knee-joint, and measured twenty-three inches in circumference. On its being tapped, five quarts of a very dark, almost black, serum (the hydrocele originated in a severe blow received fifteen years before) was discharged. Within three years paracentesis has been repeated six times, never less than three pints being discharged—the fluid being much lighter in color on these latter occasions. The patient refused to consent to other than palliative treatment. Dr. Meachem reports this case on account of the very unusual size of the hydrocele, ranking among the largest on record.

ART. 184.—*Urethral Rheumatism.*

By THOMAS BOND, F.R.C.S.

(*British Medical Journal*, November 25, 1871.)

At a meeting of the Medical Society of London, Mr. Thomas Bond read a paper on the so-called urethral rheumatism. This was not the effect of any specific poison or constitutional diathesis; and it often occurred independently of gonorrhœa, as well as of very gouty or rheumatic predisposition. It was dependent on a local condition of the urethra; and he called it urethral rheumatism as being the most convenient name. It occurred in men of an anæmic or weakly condition, or when gonorrhœa had been treated too long by copaiba or purgatives. There was a subacute inflammation of the synovial membranes and of the fibrous tissues about the ankles, heels, and balls of the great toes; it gradually affected the shoulders, elbows, and hands. Congestion of the sclerotic was present, and the health suffered severely. Exacerbation took place, with pains in the loins in the morning, followed by profuse perspiration, with loss of appetite and of sleep. The urine was scanty, the tongue coated, the face hectic. The limbs often became permanently contracted, unless great skill and care were used in the treatment. The urethral discharge varied from profuse muco-purulent discharge to the slightest gleet fluid. The disease was not diathetic, but septæmic; in fact, a chronic pyæmia. He believed that the altered state of the blood was kept up by the daily absorption of the morbid materials from the urethra. As soon as the supply of the *materies morbi* from absorption was stopped, the blood gradually eliminated the poison and returned to its healthy state. The peculiar immunity of women was owing to the greater thickness and coarseness of the vaginal epithelium than that of the male urethra, and to their not being treated by specifics and antiphlogistics. If the disease were a rheumatic urethritis, and not a urethral rheumatism, why should not women be equally liable with men? Antiphlogistics, copaiba, and iodide of potassium did no good, but rather

harm. The proper treatment was full diet, with steel and quinia wine, and porter, and lastly injection, until the discharge was completely cured. A very good injection was tannin and opium with water.

ART. 185.—*The Value of Circumcision as a Hygienic Measure.*

By M. J. MOSES, M.D.

(*New York Medical Journal*, November, 1871.)

Dr. Moses speaks of circumcision as a hygienic and therapeutic measure, and is convinced that the Jews of the enlightened school are inaugurating a dangerous reform, in the desire to invade the hitherto inviolability of the Jewish law; and he would impress upon his professional brethren of other creeds the necessity of explaining to their Jewish patrons the value and safety of maintaining circumcision, if not as a religious duty, as a hygienic measure, the importance of which probably influenced its institution as a ceremonial law.

Dr. Moses remarks that if the following plan is observed all danger may be considered as provided against and need never occur if the surgeon watch his case properly.

1st. The amount of tissue sacrificed should be only just enough to divide the muco-dermoid junction.

2d. The reflected mucous membrane should be carefully adjusted to the cut edge of the dermoid fold.

3d. The frænum should not be wounded or lacerated.

4th. The wound should be kept open until active bleeding ceases, and the effused lymph has glazed on the line of approximation.

5th. The dressing should be the ordinary cold water dressing, made of very fine linen, lightly applied.

6th. The surgeon should visit his patient, and renew the dressing two hours after the operation.

7th. A careful and attentive nurse, duly warned as to any possible accident, should watch the dressing from minute to minute. The dressing of cold water should be exchanged for one of soft oiled linen the morning following the operation.

8th. As soon as the healing has well begun, all dressing should be discarded, and the parts bathed in tepid water after each voidance of urine.

9th. The operation should be done by a surgeon, and the condition of the child, as to his ability to undergo the ordeal, submitted to his direction.

To guard against hemorrhage, even under these circumstances, a reliable styptic, tannin, Monsel's iron, pulv. matico, punk, cobweb, the so-called alum-iron, charpie, etc., should be left with those who are charged with the care of the child, with careful directions as to how, and under what circumstances it is to be applied.

ART. 186.—*On "Holt's Operation" for Stricture.*

By JAMES SPENCE, F.R.S.E., Surgeon to the Queen in Scotland.

("Lectures on Surgery," parts iii. and iv.; Edinburgh, 1871.)

Mr. Spence writes:—

"I was at first prejudiced against this plan, owing to what I had seen of the effects produced by the forcible dilatation with the conical sound. In cases where that instrument had been used, I had noticed that an irritable and resilient state of the contraction was the almost invariable result. From some opportunities I had of examining strictures dilated by this method on the dead body, I found the mucous membrane at and on either side of the stricture fissured, and I considered this condition so similar to that of fissure of the rectum, that the intense irritability seemed to me referable to this fissured con-

dition of the mucons membrane. Hence the immediate dilatation by Mr. Holt's method seemed to me as likely to lead to the same disagreeable results; but after trying it in some cases, and having had an opportunity of examining a stricture which had been treated by this method, I found there was a difference between its action and that of the conical bougie. I saw that by his plan the stricture was fairly ruptured, not only through the mucous membrane, but through the condensed submucous tissue forming the contraction. Now, we know all that is required to cure the excessive irritability of fissure of the anus is division of the fissure fairly through its hard base; and whilst we usually effect that with the knife, still it can be effected by the coarser method of rupture with the fingers; so that Holt's method by fairly rupturing the hardened basement texture of the contraction prevents or even cures the irritable condition of the stricture, and thus acts very differently from the partial fissuring of the mucons membrane caused by the conical bougie. For the last nine or ten years I have practised Holt's method, and with great success, so that I feel no hesitation in recommending it as at once efficacious and safe—that is, as free from danger as any operation on diseased urinary organs can be."

ART. 187.—*On the Treatment of Tubercle of the Testicle.*¹

By M. CHASSAIGNAC.

(*Gazette Hebdomadaire*, No. 48, 1871.)

"The object of this communication is to eliminate from the treatment of testicular suppuration such rigorous methods as castration and the employment of the actual cautery, by proving that better results may be obtained by milder means, and that the application of heroic remedies leads to lamentable practical consequences. The various suppurations which may give rise to fistulæ occupying the scrotal region, consist, on the one hand, in urinary abscesses, of which I intend to speak now; and, on the other do not, in (1) tuberculous abscess of the testicle; (2) encysted testicular suppurations; (3) tuberculous abscesses of the epididymis; (4) diffused testicular suppurations; (5) non-tuberculous suppuration in the epididymis; (6) fistulæ, following suppurative inflammation of the tunica vaginalis; (7) purely scrotal fistulæ, resulting from phlegmon; and, finally, gummatous tumors, giving rise to fistulæ, may form in the testicle and in the lower part of the scrotum. None of these affections demand excision of the testicle. In this matter there have been veritable surgical mishaps; healthy testicles have been removed in cases of simple abscess. The chief mischief does not arise from the ablation of a partially destroyed and useless organ, it has its origin chiefly in the section of the cord, with its hemorrhages, its purulent diffusions either into the scrotum or into the inguinal regions. And when the cord itself is tuberculous, what can be done by excision? But it is asked, what is to be done when the ravages of the disease have become so severe as to indicate nothing short of excision? This shows precisely the utility of proceeding from the commencement by methods of canalization; a simple tube would have prevented all these disorders.

"Without disputing the cases of cure of tuberculous fistulæ by the actual cautery, there are reasons which lead me to oppose this kind of practice. The hot iron passed over the living tissues may be applied to points which we wish to spare, or may not touch parts which we wish to attack. The cicatrization which follows the application of the actual cautery gives rise to an inodular formation, particularly at the entrance of the fistula, in the surrounding integument, which closes the fistulous canal, and so leads to the formation of a fresh abscess in the deep-seated parts. Finally, the cauterization is a burn, and I have noticed that burns of the scrotum expose the patient in many cases to the risks of erysipelas and angeioleucitis.

¹ Communicated to the Société de Chirurgie, of Paris.

"I will represent in a single and very short case, the usual results of my practice in regard to the above affections. A man aged twenty-seven years was admitted into the Lariboisière on May 30, 1863. For nineteen years there had been a gradual increase in the size of the scrotum on the left side. This he attributed to a fall from a tree. About a year before admission he was treated in Algeria, but without success. On June 17th the cul-de-sac of a fistulous canal was opened, and a tube passed through. This was followed by slight inflammatory symptoms; the suppuration was slightly increased, and then disappeared altogether. The cessation of the discharge was permanent, and the cure perfectly verified by consultation.

"Curling has reported two examples of castration performed in cases of suppuration in the epididymis, for the treatment of which at the present day the most extravagant partisans of castration would have hesitated to resort to this mutilation. Drainage by elastic fenestrated tubes has led in like cases to the most satisfactory results. I have many opportunities of making out the permanence of the cure.

"In certain cases pus is imprisoned in the testicle; the organ is swollen and painful. For this, amputation has been admitted as the only remedy. Sir Astley Cooper, in examining a testicle which he had removed, found in its centre a chronic abscess. M. Nélaton and M. Denonvilliers have each reported an analogous case. M. Gosselin, in a case of the kind, made a simple incision, which was not followed by a fungus. A patient treated by myself in La Charité, in 1847, with a simple incision, also recovered without a fungoid growth.

"The epididymis is much more frequently than the testicle the seat of suppurations, which are generally chronic. It is especially in the form of softened tubercle that this suppuration of the epididymis presents itself. There exist two kinds of suppurative epididymitis—canalicular epididymitis and cellular epididymitis. The first is very rare, and I have seen but one example. The other is much more frequent. When the suppuration is canalicular, neither the actual cautery nor excision will avail. The former cannot penetrate into the deferent canal, and the knife will remove but a portion of the disease. If abscesses exist in the cellular tissue, the affection is too slight to justify the ultimate resources of surgery. Sometimes, when the epididymis has been the seat of prolonged suppuration, the integument of the scrotum is undermined, and the pus reaches as far as the groin, where may be observed symptoms of adenitis. Drainage ultimately restores the structures to their normal condition.

"The most interesting side of the question relates to the errors of diagnosis. Tuberculous abscess of the epididymis, and especially tuberculous fistula, resemble a fistula of the epididymis which is not tuberculous; there is a differential sign, but it does not exist always. This is irregular induration of the cord in cases of tuberculous fistula of the epididymis. In one patient who was thought to be the subject of tuberculous fistula of the epididymis, and to whom a celebrated surgeon proposed castration, cure was effected in seven weeks by the use of a drainage tube. Bad symptoms sometimes follow the puncture of a hydrocele, the point of the trocar having probably wounded the epididymis.

"From the preceding remarks, it remains established that the testicle ought not to be removed for an abscess, and above all for an encysted abscess. Whenever, by the long standing of the disease, fatigue, pain, and exhaustion, it is necessary to consider the question of castration for the treatment of testicular enlargement, the surgeon ought, before undertaking the operation, to make an exploratory puncture, and then if the instrument gives exit to pus, to make a simple incision. If incision alone is insufficient, he should then resort to drainage, and never proceed to testicular mutilation for purely suppurative affections, however complicated they may at first sight have appeared to be."

ART. 188.—*On the Treatment of Hæmorrhoids by Fuming Nitric Acid.*

By Professor BILLROTH.

(Wiener Medicinische Wochenschrift, xxi. 35, 1871; Schmidt's Jahrbücher, No. 1, 1872.)

Mr. Curling, in his "Observations on Diseases of the Rectum," recommends, for the treatment of the so-called internal hæmorrhoids, to which the Germans give the name of hæmorrhoidal prolapse, the method carried into practice by Dr. Houston, of Dublin.

Prof. Billroth has operated with good results in twenty-six cases of hæmorrhoidal tumors. Of these four were treated according to Langenbeck's plan by the actual cautery, ten by the galvano-caustic noose, and twelve by fuming nitric acid. All the cases ended in cure. Prof. Billroth has never practised deligation and excision; the use of the écraseur on account of the subsequent bleeding and stricture is now quite abandoned. The galvano-caustic method frequently causes constrictions, which, however, disappear in the course of from three to five months. Such a result has not been observed after the application of the actual cautery, as the action of this agent upon the surrounding healthy tissues does not extend so deeply as is generally supposed. The action of the actual cautery may be obtained by a method simpler and not such a cause of terror and agitation to the patient. Prof. Billroth had previously used nitric acid in many cases of telangectasis. After touching a red patch of this kind until it becomes of a gray color, a brown eschar is formed, which is detached in the course of ten or fourteen days, healing subsequently taking place with the formation of a soft smooth cicatrix. This method is only suited for quite flat angiomas and for these it is much to be recommended.

During the last two years Prof. Billroth has treated in the following manner patients suffering from prolapsed hæmorrhoids: On the previous morning a dose of castor oil was administered, and on the morning of the operation a clyster. After the return of the latter, which causes protrusion of the piles, the patient is placed in bed with the knees and hips well flexed; the skin around having been thickly smeared with fat, he then applies a piece of stick dipped in freshly prepared fuming nitric acid to the whole of the projecting mucous membrane until it has become stiff and of a yellowish-gray color. The manipulation is seldom so painful as to demand narcosis. Dragging down the piles by means of sharp double hooks is if possible to be avoided, since this always gives rise to hemorrhage. Cauterization of the fold intervening between the skin and mucous membrane causes unnecessary pain. When the cauterization is completed, the protruded portion is smeared with oil and then returned. If the prolapse should again take place, which it may do, and the progress of the case be still satisfactory, lead lotion is to be applied. If pain continues after the reposition of the hæmorrhoids, which is rarely the case, a morphia suppository will give relief. For a few days after the operation the patient takes simple diet. Febrile disturbance seldom occurs. Retention of urine frequently comes on after this as after other operations on the rectum; then warm baths and fomentations are to be ordered; if these do not succeed a catheter must be passed with *very particular care*, as the retention depends upon spasm of the vesical sphincter. In the worst cases it is necessary to administer chloroform before a catheter can be passed. For some days after the operation there generally is constipation. If four days have passed without a stool, Prof. Billroth administers a small dose of castor oil. The first motion is very painful, after the second or third the pain does not return; the bowel does not come down again, and in some cases the patient has not been kept to the house for more than six or eight days. None of Prof. Billroth's patients were kept to the house longer than fourteen days.

Sometimes the separation of the eschars is attended with pain and hemorrhage. In no case was it necessary to repeat the cauterization. In no patients who had been operated upon twelve months previously, was any stricture or impairment of the rectum found.

ART. 189.—*On Strangulated Hernia.*

By Sir JAMES PAGET, Bart., V.P.R.S.

(British Medical Journal, April 27.)

In speaking of the condition of the patient as affecting the risk of the operation by reason of age, and health, and various complications, Sir James says that among his cases he finds not only many of the fattest and feeblest, but examples of complication with phthisis, acute and chronic bronchitis, aortic constriction, phlebitis, gastric ulcer, diseased bladder, intestinal disorders of various kinds, and internal strangulation. Patients, such as these were, one would not wound for any trivial good; but with a strangulated hernia, the peril of doing the operation can hardly ever be so great as the peril of leaving it undone. Old age and feebleness, fatness, intemperance, or unsoundness of whatever kind, may add to the risks of this, as of any other operation; but all these risks must be accepted. A patient must not be allowed to die with a strangulated hernia, if by any means whatever the strangulation can be relieved; and we must not be averted from the operation by any consideration of the number of deaths that follow it. The deaths after the operation may be fifty per cent.; but the deaths due to the operation are not more than two or three per cent., and even these would probably have been deaths from the hernia if the operation had not been performed. The great proportion of deaths is made up of those in whom the strangulation has done mischief which the operation cannot remedy. It is not unfair to maintain that, speaking generally, the deaths after operations for hernia are only to be counted as failures to save life, while the recoveries are to be counted as lives saved from certainly impending death.

ART. 190.—*On Strangulated Hernia.*

By JAMES SPENCE, F.R.S.E., Surgeon to the Queen in Scotland.

("Lectures on Surgery," parts iii. and iv.; Edinburgh, 1871.)

In speaking of strangulated hernia, Mr. Spence says:—

"Several years since, I looked over the results of 127 cases of hernia, in which I had operated, and in these there were twenty-six deaths; in seventeen out of the fatal cases the gut was distinctly gangrenous, and therefore; though the operation was the only chance of saving the patient's life, the state of the intestine was such that a favorable result could hardly be expected. In seven cases peritonitis had commenced before the operation; and of these, four were cases of congenital hernia, where peritonitis occurs rapidly. In one case pyæmia proved fatal on the eighth day, but this case was a very complicated one. In one recent case a fatal result occurred; here the operation was extra-peritoneal, and the hernia was very large and bulky, and had come down rather rapidly while the patient was at work. The man made violent efforts at the time to reduce the hernia, while afterwards attempts were also made, but without success. In this case the hernia had only been down for twelve hours. When I operated I divided the integument and the fascia down to the deep ring, and then by dividing the textures external to the neck of the sac, I was able to reduce the hernia with ease. After a time the patient began to pass bloody stools, showing that hemorrhage from the interior of the gut had taken place, evidently in consequence of the efforts the man had made to reduce the hernia at first. I believe that if cold had been applied to the tumor, and the taxis properly employed at first, the hernia might have been reduced without any operation. The real cause of the fatal result was evidently the mischief produced by the violent and ill-directed efforts made by the patient to reduce the hernia when it came down."

ART. 191.—*Two Cases of Uterine Polypi.*

Under the care of Mr. HULKE, at the Middlesex Hospital.

(Medical Times and Gazette, Dec. 16, 1871.)

Hemorrhage is usually an early as well as a leading symptom of uterine polypi. The interest of the following case lies in the complete absence of bleeding until the polypus protruded through the vulva, its appearance externally being the first indication to the patient of the existence of the growth.

CASE 1.—A tall, thin blonde, aged thirty-two, a cook, was admitted into Regent Ward on May 14th, for the protrusion of an unnatural substance through the os uteri, followed by bleeding. She related that a fortnight previously she felt some discomfort, and found, on going to the closet, a roundish body, of the thickness and length of the first two joints of her little finger, protruding from her person. Profuse bleeding soon followed. A doctor who was called to see her applied tannic acid, which checked it, and the protruding body disappeared. On an examination, the os uteri was found slightly dilated, and floating in the vagina was a long, roundish, soft polypus, not very unlike an overgrown uvula, which appeared to be attached just within the os, to its posterior lip. It was pulled down with a loop of thread, and cut off with an écraseur. No bleeding occurred, and in a few days she was discharged convalescent. A small scar marked the point of attachment.

It is commonly taught that the removal of a fibrous polypus from the uterus is never followed by recurrence, any portion of the stalk which may be left, withering and finally disappearing. The general truth of this is confirmed by experience; but there are exceptions, and, in the following case, had the patient survived long enough after the removal of the first polypus, a second and even a third might have been evolved out of the original stalk.

CASE 2.—A servant, aged thirty-nine, was admitted May 30th, 1870, in a state of great prostration, into the cancer wards, having that morning had such profuse hemorrhage from the womb that her medical attendant had only restrained it by using a strong styptic injection of a salt of iron. He had looked upon the disease as cancer, and had advised her removal into the hospital. During ten months she had suffered frequent and great losses of blood, unaccompanied, however, by any other vaginal discharge or by pain.

On a digital examination, the vagina was found filled with a tough clot overlying a tumor, the nature and connection of which could not be clearly made out without detaching the clot, and it was feared this might provoke a fresh hemorrhage, which in the exhausted state of the patient would very likely be fatal.

Four days afterwards the bleeding recurred, and at a consultation with Dr. Davis and Mr. De Morgan the tumor, being found to be a polypus of the size of a large pear, was at once removed with the écraseur as the best means of arresting the bleeding and saving the woman's life. The removal of the polypus was bloodless, and the bleeding did not again recur, but the patient sank, and died a week later. At the post-mortem examination the stock of the polypus was found to be attached near the fundus of the uterus, and to contain three small fibromata of the size of peas, each of which might in succession have grown to a large polypus.

ART. 192.—*Two Cases of Recto-Vesical Fistula, successfully treated by Colotomy.*

By THOMAS BRYANT, F.R.C.S.

(The Lancet, March 16.)

At a meeting of the Clinical Society of London on February 23d. Mr. Thomas Bryant read a paper on two cases of recto-vesical fistula successfully treated by colotomy. The first was that of a gentleman, aged sixty-four, who had

diarrhoea, tenesmus, and the passage of blood and mucus three months before he had begun to pass feces in his urine. Colotomy was performed on August 16th, 1869, with complete relief. The patient was up and out of the house in a month. At the present time he passes his urine naturally, and the motions through the loin, some little urine at times finding its way into the rectum and upwards through the loin. The ulcer in the bowel has long healed, the fistula alone remaining. The second case was that of a gentleman, aged forty-nine, who for three years had been passing urine and feces by the urethra. He was much reduced in health, and most miserable from the local pain and irritation caused by his disease. On the 5th July, 1870, colotomy was performed, complete relief resulting almost immediately. In three weeks he was up, and in another week out. Six months later he reported that he was getting quite fat, that he was free from all pain, and that his only trouble was the passage of water at times up the bowel through the artificial anus. At the present time, a year and a half after the operation, he remains well. In both these cases Mr. Bryant remarked that there was good reason to believe that the ulcerative action that had caused the fistula was of a simple nature, and had commenced in the rectum; that after the operation the ulcerations soon healed, although the fistulous opening remained. He stated that the two cases in every way supported the remarks appended to a similar case which he had read at a sister society, and which were published in the *British and Foreign Quarterly Journal*, 1869, and still more prove the truth of Mr. Holmes's remarks on the same subject recorded in the *Med.-Chir. Transactions*, 1869-70. Mr. Bryant added that these cases, and all others he has had since 1868, have made him think more highly of the oblique incision in the operation than the transverse.

ART. 193.—*Flap Operation for Vesico-Vaginal Fistula.*¹

By E. D. MAPOTHER, Surgeon to St. Vincent's Hospital, late Examiner in Surgery, Queen's University.

(*Medical Press and Circular*, April 10.)

Some months ago, Dr. Kidd, while consulting about a vesico-vaginal fistula, suggested to the author a mode of operation so ingenious and effective that he determined to adopt it when he met a suitable case. On the 10th of February, Dr. Kelly, of Ballinrobe, sent Dr. Mapother, for operation at St. Vincent's Hospital, a young woman in whom a vesico-vaginal fistula had formed four months previously, the patient having been forty-eight hours in labor. The distressing features of the disease, such as the soaking of all clothes with urine, and the excoriation of the thighs and nates, were fully developed, and round the anus sebaceous outgrowths had sprung out to a great size, and had been encrusted with phosphates and fetid matter. The anterior wall of the vagina when exposed by the aid of the duckbill speculum, was found to be perforated by a round hole about one-quarter inch in diameter. The excoriations having been healed, and the sebaceous outgrowths repressed by the use of carbolated oil, and the bladder and urethra having been accustomed to the wearing of a catheter, Dr. Mapother operated after the following manner, his colleagues and Drs. Kidd and Rose assisting him.

A U-shaped cut was made with an ordinary scalpel round the fistula through half the thickness of the vesical wall of the vagina, and the flap thus marked out was easily dissected upwards with the scalpel and forceps. The wall of the bladder now bulged back, and urine flowed freely through the corresponding half of the fistula. The vaginal flap being pared off by scissors put above the fistula in a semicircular way, the remainder of the flap easily came down to the lower edge of the raw space, owing to the elasticity of the vaginal wall; it was then secured by four iron-wire sutures put in by the tubular needle and twisted by the finger. The catheter was kept in six days,

¹ Read before the Surgical Society of Ireland, March 15th.

and not a drop of urine came away except through it. That with wings at the eye is convenient, but a No. 6 male catheter opening into a soda-water bottle is very suitable. It was then left out, and the woman micturated voluntarily every two hours. Next day, finding the fistula completely cured, the sutures were cut and removed. Sixteen days after the operation, as the patient was micturating quite naturally, she left the hospital.

The operation, Dr. Mapother states, is admirably suited for small fistulæ, that is, up to one-third inch in diameter, and they are the cases most difficult to cure by any freshening, paring, or splitting of the edges. The flap from the vaginal surface of the septum when drawn down over the hole in the vesical surface offers an effectual barrier to the passage of the urine.

There was but one exception to Dr. Mapother's description. He thought when they drew the flap down over the opening, that the thin inner surface was folded upon itself. The flap was composed of the vesical portion of the septum, leaving the coat of the bladder, and when they drew down the flap upon the fistula the inner portion became doubled upon itself, and thus they had not only the flap over the opening, but two broad raw surfaces brought in contact and held together without any suture. There was, therefore, a complete barrier against any escape of urine.

Dr. Rose said that the plan suggested by Dr. Kidd, and which he had tried successfully on the patient sent to him by Mr. Porter, was only applicable to small fistulas, and would not succeed in large ones. The splitting operation which was suggested by the late Mr. Maurice Collis, was found to be most successful in large cases, and he did not think this could ever be substituted for it, as Dr. Mapother appeared to think.

Dr. Cronyn considered they were much indebted to Dr. Kidd for the introduction of an operation which had proved most successful. He unfortunately had the opportunity of seeing a great number of fistulas, and a great number of operations, and his experience had been that the vast majority of them proved unsuccessful. Therefore it was that the Society and the Profession were much indebted to Dr. Kidd for a modification of an operation that had been hitherto so unfortunate. He did not know whether the observations he was about to make were altogether in place in a Surgical Society—they would, perhaps, be more appropriately addressed to the members of an Obstetrical Society; but he wished to say that the practical lesson to be derived from these cases of fistula was that the second stage of labor ought to be shortened, and the occurrence of these fistulas prevented. Scarcely any of the cases he had heard of had occurred in the city of Dublin. They had invariably come from remote districts of the country, and the history of the cases showed that in each instance the women had been allowed to remain in labor, two, three, or four days when this accident occurred. Every effort, therefore, of the obstetrician should be directed to shorten the second stage of labor.

Dr. Mapother had not the slightest doubt, for he had made a very diligent search through all the authorities on the subject, that Dr. Kidd was the originator of this operation; but in this, as in other instances of surgical and in all mechanical devices, they must turn to the works of the Creator for the first exemplification of the principle. This was the exact method of closing the foramen ovale in the fœtus, and the flap which grew upwards and adhered to the left side of the opening, opposed an effectual barrier to the blood from either auricle. He saw in Dieffenbach's work, a great many operations described of taking flaps from the posterior surface of the vagina, and drawing them forward on the fistula; but these operations were completely given up, and to the other methods of closing a small fistula it was unnecessary to allude. He might just mention that he had seen Dr. Kidd operate in a case of vesico-vaginal fistula, where there was no vaginal wall of the bladder at all. He divided the os uteri, pulled down the posterior lip of the cervix, uteri, and attached it round the edge of the vast fistula previously freshened. Of course the woman, who was within the period of menstruation, was obliged afterwards to menstruate by the bladder, and he understood that in a similar case, not only did a woman freely menstruate in that way, but she actually conceived. The spermatozoa entered the uterus by the bladder, and she became pregnant.

Every day he (Dr. Mapother) taught, as a lecturer on physiology, that spermatozoa immediately lost their life on coming in contact with urine; but it must be supposed, that in this particular instance, when they found their way into the bladder, this organ happened to be completely empty of urine. Dr. Roe misunderstood him, in supposing that he thought this operation would suit large fistulas, but he certainly thought any fistula one-third of an inch in diameter, might be cured by this most ingenious operation suggested by his friend Dr. Kidd.

Dr. Kidd observed that the case mentioned by Dr. Mapother was one recorded by Mr. Lane, of London. He turned the os into the bladder, and the woman remained perfectly water-tight after the operation. She went home, and after several months returned to St. Mary's Hospital with a marked uterine tumor. The idea of pregnancy never occurred to any of them. She stated that she had menstruated through the bladder for some time, and then ceased to do so, and the idea entertained was, that the uterus was full of retained menses. On that supposition, a trocar was passed into the tumor, and a considerable escape of fluid occurred, and some hours afterwards a foetus was expelled through the opening which was thus made.

Dr. Cronyn said that on one occasion, a woman arrived at the Rotundo Hospital, evidently with labor-pains. The vagina was found to be completely occluded. There was no os, and no mode of arriving at a diagnosis of her condition except from the tumor pressing on the vagina. A full consultation was held on the case, and Dr. Denham dissected down to the occluded structure and came upon the os uteri, which was then dilated, and the woman was delivered of a healthy child. The explanation was that, after her first labor, a prolonged sloughing process was kept up in the vagina and the husband had connection with her in that condition. Subsequently the sloughing was cured and the vagina became occluded.

ART. 194.—*Catarrh of the Bladder in Man.*¹

By Dr. KRAUS, of Vienna.

(*Medical Press and Circular*, May 29.)

"Effervescing wines, we stated, have a very injurious effect in urinary diseases, and that does not appear to depend upon the carbonic acid, but upon its combinations with mineral substances contained in the wine, since those suffering from vesical and renal maladies bear very well water charged with carbonic acid, which exerts a beneficial influence in assisting the expulsion of the phosphates from the kidneys and bladder. Carbonic acid, seemingly, is never found in a free state in the bladder; you never see the urine froth or become covered with bubbles, save after contact with atmospheric air.

"Champagne not only augments the secretions, but likewise increases the quantity of phosphates in an extraordinary manner, and the conduct of some physicians who prescribe champagne to those suffering from gravel or stone is quite unjustifiable, and irrational. The acicular crystals of the triple phosphates multiply visibly in the urine, and cause severe pain, becoming imbedded in the tissues along the course of the urinary passages, more especially at the neck of the bladder. One starts with the idea, that carbonic acid may perhaps exert a certain dissolving action upon concretions already formed; my experience absolutely contradicts this opinion. Carbonic acid acts in provoking a slight exaltation of the tonicity of the contractile elements of the urinary apparatus necessary for the expulsion of foreign bodies. This excitation is perhaps derived from the organic nervous centres. Carbonic acid contributes nothing to the dissolution of the organic or inorganic constituents of the urine.

"We know that wine is often submitted to the action of sulphur with a view to preserve it. When this operation reveals itself to the taste, that is to say,

¹ Translated for the Medical Press from *Le Mouvement Médical*, by F. M. Luther, M.D.

when the wine contains a great quantity of sulphur, it is injurious, and the chief result is a strong alkaline reaction of the urine. The malign influence upon the urinary passages and upon the reaction of the urine is shared by all sulphurous waters, and patients suffering from bladder affections are invariably worse after the use of sulphurous baths, as well as after the exhibition of mineral sulphurous waters.

"The same phenomena which are observable after the use of wines rich in tannin, reproduce themselves when one drinks wines impregnated with lead; stranguy and hæmaturia are the constant result of imbibing them, and if one should seek by administering metallic astringents to check those hemorrhages of the uropoietic system, quite a different result would be arrived at. A great deal of the hemorrhages of the urethra which follow upon injections with acetate of lead, ought to be set down to the account of this astringent, of which mucous membranes affected with chronic catarrh are particularly intolerant.

"We now arrive at the beverage in most common use, to wit, beer, and its action in diseases of the urinary passages. We ought to be cautious how we use it, seeing that it cannot always be procured of irreproachable quality, and that the least alteration in its composition produces injurious results. Old beer causes no inconvenience, but the mucous membrane of the urinary passages becomes exquisitely sensitive in presence of new, bad, or sour beer. Ferments are the most deleterious element of bad beer; they penetrate the epithelium of the urinary mucous membranes, and not only occasion pains in the loins, renal colics, but even affect injuriously the mucous tissues, which in chronic catarrh do not need that to undergo different alteration of texture.

"If one examines the urine evacuated by a patient suffering from vesical catarrh immediately after the exhibition of new beer, nothing else is observed than a pronounced alkalescence. If this urine is left for six or eight hours in a warm place, and then examined under the microscope, it will at first sight be thought to be the urine of a diabetic patient; in a drop of it will be seen swimming about little globules which are ferment cells, sporidia of a peculiar species of *confervæ*, like those which develop with extreme rapidity in saccharine liquids which commence to ferment. But diabetic urine is distinguished by this characteristic, that, after resting for twenty-four hours, there is formed upon its surface a pellicle, which examined under the microscope is seen to be composed of ovoid corpuscles and little tubes, articulated, simple, or branched; these are the buds of a minute alga, the *torula cerivisiæ*. In the urine which is examined after the ingestion of new beer, the ferments do not attain this development; probably the urine must contain more sugar, and retain it longer for this degree of fermentation to be produced.

"*Bière anglaise*, pale ale, possesses this same noxious quality. Its richness in alcohol, and the quantity of carbonic acid which characterize it are the cause; porter, on the contrary, is very well borne. It is clear that quality and age are to be regarded, and as we rarely draw it from the best sources, I cannot counsel its use. I only want to show that it is innocuous, and to justify the English physicians who allow it in vesical diseases.

"Patients suffering from the bladder, even when they have been accustomed to beer for many years, must still give it up completely, and replace it by wine, when the catarrh is obstinate and of years' standing. By so doing, a decided modification will be obtained in the whole ensemble of the disease, and especially the disappearance of alkalescence from the urine. One should never absolutely deprive of alcoholic drinks persons who make daily use of one or other of them, because it would weaken them and diminish the necessary energy of the muscles, of which we have already frequently spoken.

"I wish particularly to point out that, in young people, in those cases where the catarrh passes from the acute to the chronic stage, where a depression of muscular energy need not be dreaded, distilled water is the best drink, and even in very old catarrh, where we said wine was useful, the imbibition of a large quantity of distilled water is indispensable to the obtaining of a cure. Baths¹ should also be repeated every day till all sediments and alkaline reac-

¹ Turkish baths.

tion shall have disappeared from the urine. Then only may we talk of a complete cure of vesical catarrh. There remains only for us to speak of the value of some mineral waters so frequently prescribed in diseases of the bladder and kidneys. Upon this subject, let us remark that we have been accustomed to treat maladies of the urinary passages summarily, and that the practice of the most esteemed clinical students has presented the most manifest contradictions.

"We think that we have clearly characterized each form of catarrh in each of the organs of the urinary system; to each of them corresponds a special therapeutic and dietetic regimen. In sending then a patient to Carlsbad, or prescribing the waters of Preblau or Vichy, simply because he was supposed to labor under disease of the bladder or kidney, as is so often done, ignorance is betrayed of the chemistry of those maladies, which plays a very important part in them, and should be very much taken into account.

"Carlsbad and its waters are positively dangerous in all cases where the catarrh is complicated by phosphatic sediments; these are certainly augmented by the use of this spa, and calculi soon form. It is inexcusable to allow a patient to sojourn at Carlsbad in the acute or subacute period of vesical catarrh. Professor Haller, director of the pathologic-chemical institute of the hospital, had combated energetically but vainly this line of treatment, because his analysis of the urine of persons sent to Carlsbad with chronic catarrh of all kinds and phosphatic sediments, showed him on their return from the spa an augmentation of sediments in the urine.

"What action can the alkalies with which the waters of Carlsbad are saturated, have upon the kidneys or bladder? What reasonable motive can there be for introducing those salts into an organism already overcharged with them?

"The waters of Preblau only act in chronic catarrhs without triple phosphate, and their action is not of long duration; the prolongation of their use does not exert any beneficial influence in chronic catarrh. I may say the same of Vichy. As long as the carbonic acid, which predominates as we know in the water of Preblau, continues to act, we remark a greater evacuation of sediments, and the urine becomes acid. But after the first week this phenomenon disappears, and the alkalinity of the urine reappears in an intensified degree, which is equivalent to an aggravation of the malady. Even when patients think that they are seemingly better because the vivifying influence of the carbonic acid makes them feel more comfortable, it is only an artificial state, which disappears as soon as the organism gets accustomed to its stimulus.

"When the mucous membranes of the urinary passages are altered in their tissues by catarrhs, which have lasted for years, when their epithelium peels away in flakes, tonics are indicated, and experience has taught me that in all the pharmaceutical arsenal one can expect success from steel alone. Carbonate of iron is in such case a remedy that cannot be too much employed, and I have given as much as twenty grains a day without altering in anything the prognosis that I have indicated above. The use of wine, the ingestion of distilled water, and a nutritious diet, agree very well with this drug, as also baths—baths of many hours' duration are quite compatible with the use of iron.

"When one commences to take carbonate of iron, the stools become more abundant; but this symptom lasts at farthest for eight days, and things resume their normal course. The black discoloration of the stools is a sign that the steel fulfils its office, and what is superfluous is expelled by the abdominal passages. It is remarkable, that in cases where steel is not tolerated, the stools do not become black; dyspeptic symptoms then supervene, heartburn and nausea, and the steel has in consequence to be renounced.

"I do not know if it is to the iron or to the common action of baths that one should attribute the positive amelioration that chalybeate baths procure in chronic catarrh, especially those of very old date.

"The ingestion of chalybeates is also very advantageous, so that patients suffering from chronic catarrh with destruction of the mucous membrane may employ chalybeate baths as a principal means of cure.

"I have had occasion to observe recently three remarkable instances of cure by chalybeate spas. The first is that of a Servian physician, who for nine

years suffered from the most terrible symptoms of this malady, and who by my advice employed no other treatment save baths, systematic ingestion of water, and a very nourishing regimen.

"I have already pronounced, when speaking of wines, against the use of sulphur in diseases of the urinary passages, and I allude to it here, because the French physicians, Roger in particular, prescribe sulphurous waters, besides Vichy inside and out. I have strongly condemned this treatment; now, whoever will examine a catarrhal urine after the use of those waters, will verify that its alkalinity is augmented, or in other words, that the disease is aggravated. It is just the same as I have already said, with the detestable English method of treating those diseases with lime-water, which appears to me unsuitable, however little acquainted one may be with the chemistry of catarrh.

"It cannot be denied that vesical catarrh, being very often combined with catarrh of the stomach, the hyper-acidity of the gastric juice is a little diminished by the lime and sulphur, and the patients feel themselves visibly better. But experience teaches that the urinary mucous membrane does not participate in this improvement, that the quantity of phosphate of lime in the urinary passages becomes enormous, so that the malady is aggravated.

"The cure of urinary catarrh is essentially favored by securing as much as possible the kidneys from all external influences, which modern garments do not render easy. Flannel girdles are very inconvenient; bandages, however well applied they may be, over the loins become insupportable, and for years I have given to all patients that I have had to treat for diseases of the kidney and bladder, the advice to give to this means of protection the form of a lengthening of the waistband of the pantaloons covering the loins.

"This means of protection is excellent; there is nothing peculiar in it; just the trouser reaches the end of the waistcoat, and persons who are accustomed to it, cannot sufficiently extol the beneficent action of this simple method, especially those who have tried bandages of all sorts. For we know that the most ancient authors have with reason attached great importance to having the kidneys kept warm when they are diseased.

"I await with confidence the confirmation of all that I advanced upon diseases of the bladder by physicians who will make the trial, and I am convinced that by this method, the study of this disease, which occupies but three or four pages in the best known books on therapeutics, will make rapid progress.

"Until now, the essential data of this malady were very confused, so I think I am justified in the publication of my researches, honestly pursued during eighteen years, which are everywhere attracting, I perceive with pleasure, the greatest attention from medical critics. I wish with all my heart, that all ardent students of our science may contribute to this progress as I am doing for years by my journal and my other works."

ART. 195.—*On the Surgical Treatment of Suppurating Ovarian Cysts, and on Pelvic Adhesions in Ovariectomy.*¹

By T. HOLMES, F.R.C.S., Surgeon to St. George's Hospital.

(*The Lancet*, March 23.)

A case was related in which chronic suppuration occurred in an ovarian tumor, after paracentesis had been performed for the first time. Ovariectomy was postponed for some months on account of the patient's condition. When it was performed the cyst was found extensively adherent in other directions, and so tightly wedged into the pelvis that it was impossible to reach its pedicle. It contained about a gallon and a half of fluid, of which about half was pure pus. The remains of the emptied cyst were dragged out of the abdomen, a clamp was applied to its neck (at a distance above the pedicle which could not be accurately ascertained), and the wound was closed. The patient recovered,

¹ Read at a Meeting of the Royal Medical and Chirurgical Society, March 12th.

and after her recovery no sinus was left, nor was any tumor to be felt. The symptoms of acute and chronic suppuration in ovarian cysts were discussed, and it was attempted to be shown that if the general condition admits of it the suspicion of suppuration is a reason for performing the operation instead of delaying it. The case was also used to show that, in some instances, the results of ovariectomy may be perfectly favorable, though pelvic adhesions have prevented the complete delivery of the tumor. If the neck of the cyst admits of being embraced in a clamp, the lower portion of it may be obliterated during the healing of the wound. The superiority of this method, when feasible, to the other courses which may be pursued in dealing with pelvic adhesions, was shown.

Mr. Bryant remarked that the accurate diagnosis of a suppurating ovarian cyst was most important; that wasting, a hot skin, a permanently high temperature, bad appetite, local pain and tenderness on pressure, all indicated suppuration. If any doubt as to the diagnosis exists, he would be still more induced to interfere quickly, to remove the cyst if possible, or to take away as much as could be removed. He quoted a case to show the desirability of not leaving ligatures, and one also that showed the useful peculiarities of catgut.

Mr. Spencer Wells thought that with care the diagnosis between a suppurating cyst and peritonitis could be ascertained without great difficulty. An elevated temperature night and morning, with or without increase of pain or pressure, were two positive signs of the presence of a suppurating cyst. And if peritonitis exist operative procedure is still more decisively indicated. A very serious case under his care, in conjunction with Drs. Farre and Watson, in which peritonitis occurred from the bursting of the cyst into the abdominal cavity, ultimately did well. He considered it undesirable to separate adhesions before tapping the cyst, that as much should be removed as possible, and that it was a good plan to leave a drainage tube in the wound after the operation, to give free exit to suppurative discharges.

Mr. Holmes, in replying, doubted if the diagnostic signs spoken of by Mr. Wells were positive as well as negative, because in some cases high temperature exists without suppuration, and in some cases of peritonitis the temperature has been persistently high.

ART. 196.—*Report of a Case of Ovariectomy during Pregnancy.*

By EUGENE GODDARD, L.R.C.P., etc.

(*Medical Times and Gazette*, January 6.)

Dr. Eugene Goddard, at a late meeting of the Obstetrical Society, narrated the following case:—

The patient was twenty-nine years of age, and in 1870 was found to be the subject of an ovarian cyst, but as there were no urgent symptoms, the consideration of any surgical treatment was deferred. She then became pregnant, and about the end of the second month of utero-gestation, Mr. Spencer Wells removed the ovarian cyst. Eleven and a half pints of fluid were withdrawn. The clamp was removed, and the bowels acted on the eighth day. Pregnancy went on uninterruptedly, and a living child was born at the full period. Dr. Goddard said that the compound nature of the cyst precluded the idea of tapping, as also did the risk of peritonitis, suppuration of the cyst, and the formation of adhesions. Premature labor was not induced, because the patient was already beginning to suffer constitutional disturbance from the double burden, and it was doubtful whether, by the time a viable child could be born, they would have assumed such magnitude as to imperil the patient's safety; whereas, if abortion were induced, the child would be lost and the tumor would remain.

Dr. Ross related a case in which Mr. Wells had operated under more adverse circumstances, as the lady was much broken down in health at the time of the operation. A small ovarian tumor was diagnosed eighteen years ago. The patient subsequently got married, and Dr. Ross had attended her in four labors. In no instance was parturition attended with any serious difficulty. It was ob-

served that during gestation the tumor appeared to become smaller. The tumor rapidly increased about a year ago, and Mr. Wells removed it successfully, the patient being about two months pregnant. Her labor is daily expected.

Mr. Spencer Wells said that the existence of the cyst for eighteen years, and the presence in its walls of hard, bone-like masses, had led to the diagnosis of a dermoid tumor. Mr. Wells had performed ovariectomy four times during pregnancy, and all the patients had recovered.

ART. 197.—*Cases of Abdominal Aneurism treated by Proximal and Distal Pressure.*¹

By WALTER MOXON, M.D., and ARTHUR E. DURHAM, F.R.C.S.

(*Medical Times and Gazette*, April 20.)

A paper, by Dr. Walter Moxon, and Mr. Arthur E. Durham, was read, entitled, "On a Case of Abdominal Aneurism cured by Compression of the Aorta." The patient, a comparatively healthy-looking young man twenty-seven years of age, presented himself among Dr. Durham's out-patients at Guy's Hospital on August 2, 1871. On examination, he was found to be suffering from an abdominal aneurism of considerable size, the pulsation and intumescence of which were manifest to the eye as well as to the touch. He was recommended for immediate admission, and was placed under the care of Dr. Moxon, in the clinical ward. The aneurism could be distinctly felt over a space extending from rather less than an inch below the cartilages of the fixed false ribs above to a level with the umbilicus below, and from the right side of the median line across to about midway between the median line and the left border of the abdomen, or rather further. Pulsation was full and strong, but could be controlled by careful and deep digital pressure. The patient was kept perfectly at rest in bed for eleven days, and on very spare diet. At 10.30 A.M., on August 14 (no food having been taken since the preceding evening), chloroform was administered, and Mr. Durham proceeded to compress the aorta on the proximal side of the aneurism by means of Lister's abdominal tourniquet. There was just room to get the pad of the tourniquet between the cartilages of the ribs and the aneurism. The tourniquet was screwed down very slowly, and carefully adjusted in position and direction until the pulsation of the aneurism, as well as that of both femoral arteries, was completely arrested. The lower extremities were enveloped in cotton-wool, and flannel and hot-water bottles were placed in the bed. The compression was absolutely maintained for ten hours and a half, the patient being all the time kept under the influence of chloroform. At the end of that period his general condition, as indicated by pulse and respiration, was such as seemed to render it undesirable to continue the treatment. The tourniquet was accordingly removed, and no more chloroform was administered. No pulsation of the aneurism nor of the femorals could be detected. A bright-red patch marked the spot where the pad of the tourniquet had compressed the skin. The lower extremities were cold, and marked here and there by purplish or livid patches, but they were in more favorable condition than they had appeared to be at an earlier period during the compression. In the course of a short time pulsation of the aneurism could be again detected; but the aneurism remained much smaller and harder than before the treatment. The patient passed a good night, and the next day had little or nothing to complain of except the exquisite tenderness of the skin at the compressed spot. There was no internal pain or tenderness, nor any indication whatever of mischief done to the visceral or other internal structures. It seemed remarkable that such severe treatment should be followed by so marked an absence of all serious disturbance, whether local or constitutional. No bad symptom of any kind arose. The aneurism gradually became firmer

¹ Read at a Meeting of the Royal Medical and Chirurgical Society, April 9th.

and smaller, and its pulsation less and less perceptible. At the end of rather more than a month, pulsation could no longer be detected. The femoral arteries, in which, as well as in the aneurism, pulsation had to some extent temporarily returned, had also ceased to pulsate; the aneurismal tumor gradually diminished in size; the patient recovered health and strength, and indeed was apparently in far better condition than he had been for a long time previous to his admission to the hospital. He was presented for examination by the Fellows present. In commenting upon this case, the authors remarked that, so far as they were aware, it was only the second case of the kind upon record in which a similar method of treatment had been followed by similarly successful results. The first case occurred in the practice of Dr. Murray, of Newcastle (to whom they wished to ascribe all the credit of having initiated the method of treating abdominal aneurisms they had thus adopted). It appeared probable that in their case, as in that of Dr. Murray, the aneurism was connected with the aorta at or about, and probably involving, the inferior mesenteric. In such cases this method was most applicable. In another case, however, now under their care at Guy's Hospital, there was reason to believe that the aneurism was upon the superior mesenteric. Nevertheless, they hoped to succeed in applying this method, and with satisfactory result. Sphygmographic tracings were taken by Mr. Mahomed during an experimental attempt made by Mr. Durham to compress the aorta in the case referred to. Mere tracings showed in a most striking manner the effect produced upon the pulse at the wrist by compression of the abdominal aorta or immediately connected parts. In conclusion, the authors expressed their opinion that the method described should be carefully, but fully, tried in all cases of abdominal aneurism (few though such cases be) in which it may be found practicable to compress the aorta on the proximal side of the aneurism in such way and to such extent as to arrest its pulsation, and, at the same time, without the exercise of such force as might seriously damage the viscera or other internal parts. On anatomical grounds, compression of the aorta on the distal side of an aneurism would not appear to offer promise of much success.

ART. 198.—*A Case of Abdominal Aneurism treated by Distal Pressure, with Remarks.*¹

By THOMAS BRYANT, F.R.C.S., Surgeon to Guy's Hospital.

(*The Lancet*, April 20.)

The patient was one of Dr. Pavy's, who asked Mr. Bryant to see the case with a view to treatment. It was a man aged thirty, with an abdominal aneurism in the epigastric region the size of a fist. Distal pressure was determined upon, as no other treatment was applicable. It was applied by means of a Lister's abdominal tourniquet, with the patient under chloroform. It was kept up for twelve hours, then removed for twelve hours, and reapplied for four hours; the treatment being given up as the man's powers seemed failing. He died eleven hours after the removal of the clamp. After death peritonitis was found to have been the cause of death, from the bruising of the bowel and peritoneum by the clamp. An aneurism of the coeliac axis was present, which was filled with a perfect clot, evidently of recent date, but ante-mortem.

The post-mortem was made by Dr. Moxon, whose report was read.

In his remarks, Mr. Bryant pointed out how the danger of peritonitis seemed to be one that appertained to the application of pressure by an abdominal tourniquet under all circumstances, and was to be accepted as a danger which should always be considered. He dwelt upon the pathological fact, which the preparation and drawing from it taken from the patient illustrated, that a large abdominal aneurism may undergo mechanical closure by a clot from the application of distal pressure for twelve or sixteen hours. The case suggested the value of other forms of practice upon the distal side of an aneurism which

¹ Read at a Meeting of the Royal Medical and Chirurgical Society, April 9th.

are based upon the same principle, such as the temporary occlusion of an artery by ligature, acupressure pins, or other means; for if, he remarked, pressure for a few hours upon the afferent or efferent artery of an aneurism—sufficient to arrest the flow of blood through its channel—is enough to bring about the mechanical closure of a sacculated aneurism by means of a clot, and consequently its cure, surely the application of other means which are calculated to fulfil the same purpose may be employed to effect the same end. He then alluded to Hunter's, Astley Cooper's, and Traver's temporary ligatures, and to Lister's carbolized catgut ligatures, which he regarded as temporary ligatures. He went on to show how contused arteries often became occluded ones, and that this was probably from some detachments of the inner coats. He suggested the adoption of some instrumental means by which these results were to be secured—by which the inner and middle coats of an artery might be divided and allowed to recurve with destruction of the external. He then alluded to the artery constrictor of Dr. F. Spiers, of New York, and showed the instrument, stating that his own experience had gone to prove the truth of Dr. Spiers' statement. He believed that we had in this instrument an element of usefulness that wanted working out. He concluded by showing how successful the distal treatment of aneurism had been under certain circumstances, and expressed a belief that it was a form of practice well worthy of renewed attention in cases where all other forms of practice were applicable.

ART. 199.—*Report of a Case of Aneurism of the Arch of the Aorta treated by Ligature of the Left Common Carotid Artery.*

By JOHN COCKLE, M.D., and CHRISTOPHER HEATH, F.R.C.S.

(*Medical Times and Gazette*, May 10.)

At a meeting of the Clinical Society of London, on April 12, a paper by Dr. Cockle and Mr. Christopher Heath was read, "On a case of Aneurism of the Arch of the Aorta treated by Ligature of the Left Common Carotid Artery." The patient (who was brought before the Society) was a man, aged forty-eight, a farm laborer from Cambridgeshire, who came under Dr. Cockle's care in January, 1872. He had experienced pain in the right side of the head, neck, shoulder, and chest for four or five years, attributed to rheumatism. In April, 1871, he noticed a pulsating swelling in the hollow of his neck, and was in Addenbrooke's Hospital for two months without relief. After Christmas, 1871, he was compelled to give up work from the increasing pain in the shoulder and neck. He presented marked symptoms of aneurism of the ascending and transverse portions of the arch of the aorta. There was displacement of the right sterno-clavicular articulation, with projection of the right and upper portion of the sternum; and the episternal notch was filled by a pulsating swelling. There was a strongly heaving and expansile impulse over the whole of the swelling, and marked dullness on percussion existed over the whole area of the tumor. No bruit could be heard, but a double concussion-shock was felt. The respiratory murmur was feeble or absent over the upper portion of the right lung. The heart-sounds were dull and muffled, but without appreciable murmur. There was no cough or difficulty of deglutition. The left radial pulse was decidedly feeble than the right; and the left pupil was much dilated, and the left eye congested. On exertion he complained of shortness of breath, palpitation, and pain. Mr. Heath tied the left carotid artery above the omohyoid on February 26, 1872. Carbolic catgut was used for the ligature, and the wound was covered with cotton-wool. No constitutional disturbance followed. Within forty-eight hours the patient could lie and sleep on his right side, which he had been unable to do before. The left pupil became natural, and the congestion of the eye disappeared. On the eighth day, when the dressings were removed for the first time, the wound was found completely healed by first intention. Since the operation the condition of the patient had in every way improved, the chest having become flatter, and the heaving im-

pulse greatly diminished. The patient was free from all pain or inconvenience. He was brought before the Society before returning to the country, and the authors proposed to report upon his condition at a later period.

ART. 200.—*Lateral Lithotomy; Stone in the Cavity of an Abscess near the Prostate.*

Under the care of Mr. C. S. JEAFFRESON, at the Hospital for Sick Children, Newcastle-upon Tyne.

(*British Medical Journal*, June 8.)

C. F., aged eighteen months, was brought to the hospital for phimosis and blennorrhagia of some weeks' standing. His mother stated that for some time he had suffered pain whilst passing urine. He was sounded, and a calculus was readily detected. When he was placed in the position for lateral lithotomy, it was observed that a firm deep swelling existed in the perineum, occupying principally the right side. This swelling was free from tenderness; the skin over it was in no way inflamed; and, although it was suspected it was an abscess, in many ways it did not resemble one. Dr. Hume readily introduced the ordinary grooved staff, and it came in contact with the calculus. On incising the perineum some pus escaped; and when the bladder was reached there was a considerable gush of urine. On introducing the finger into the bladder, the stone could not be detected there, although but a few moments before it had been in contact with the staff. Whilst feeling for it Mr. Jeaffreson detected that his finger had gone beyond it, and that it was lying just without the bladder and to the left side, only separated from the finger by a delicate membranous wall, which was evidently the sac of the abscess. With his finger-nail, he readily tore through the latter; and the calculus, which was no larger than an ordinary bean, was easily removed. The child made a good recovery.

ART. 201.—*Lithotomy after Lithotripsy.*

By WALTER COULSON, F.R.C.S.

(*The Medical Press and Circular*, April 8.)

At a meeting of the Medical Society of London, on March 25th, Mr. Walter Coulson read a paper on lithotomy and lithotripsy. He commenced by observing that, instead of discussing the comparative merits of the two operations, it would be far more useful and grateful to examine how often and in what cases lithotomy might be called to the aid of lithotripsy. The full benefit of lithotripsy can be obtained when the operation is confined to certain limits and to certain classes of cases. But experience and success have rendered operators more enterprising. The field of operation has been gradually extended, and now embraces fully two-thirds of the cases of various calculi occurring in adults and susceptible of an operation. But this extension has not been made without entailing certain disadvantages. In proportion as the field of operation becomes extended, so the obstacle to the successful termination of the case increases. Unfavorable symptoms are liable to occur, and serious accidents, unless promptly met, may terminate in death. The only prompt and effectual method of relief in the cases now alluded to is that afforded by lithotomy. Mr. Coulson then proceeded to show from statistics that the danger of having recourse to lithotomy was not increased by its having been preceded by an unsuccessful attempt at lithotripsy. Lithotomy after lithotripsy was not more fatal than lithotomy preceded by lithotripsy, the class of patient remaining the same. This was shown by the statistics of Mr. Coulson and of Sir Henry Thompson, which gave a death rate of 1 in $4\frac{1}{2}$ cases of primary lithotomy for parties beyond the age of fifty.

For patients of the same class, but in whom lithotomy succeeded lithotripsy, the death rate was 1 in $4\frac{1}{2}$ cases. This conclusion is deduced by the author

from cases of Civiale, Swalin, Velpeau, etc., to which are added six cases that occurred in his own practice. The conditions which may render it necessary to perform a second operation were next examined by the author.

The size and hardness of stone, either singly or combined, are, according to Mr. Coulson's experience, the most frequent causes of lithotomy after lithotripsy. It is not difficult to perceive the connection between cause and effect. Large and hard calculi must require an extra amount of instrumental work, and it is quite impossible to tell beforehand what the extent or effect of that work may be. This remark, as the author observed, applies peculiarly to hardness or rather to the resistance which the stone may offer to a crushing force. Cases of multiple calculi, he thinks, should be reserved for lithotomy; but if attempts be made to crush them, the effects of each sitting should be carefully watched, for irritability and contraction of the bladder may set in. Seizing and fixing the stone between the blades of the instrument is the most important part of the operation. The author dwelt at some length on this point, and examined in detail the various obstacles which the surgeon may encounter in this part of the operation. They are:—

1st.—Cysts of the bladder, exemplified by two cases from the author's practice.

2d.—Shape of the stone—viz., when very flat. This shape presents an obstacle to the lithotomist also; but what he does is done more quickly, and there is less danger of reaction.

3d.—Great irritability and contractility of bladder. Many old cases of stone are complicated by these unfavorable conditions, which place the case beyond the reasonable limits of lithotripsy. The progress of such a case must be carefully watched, and recourse had to lithotomy if any dangerous symptoms make their appearance. Complete retention of urine may ensue during lithotripsy, and arise from various causes. The author, however, dwelt chiefly on retention accompanied by tumefaction about the prostate or neck of the bladder, caused by the action of the lithotrite. Débris are apt to accumulate at the neck of the bladder, and the distressing symptoms are little, if at all, to be relieved by passing the catheter. The author thinks that lithotomy should be had recourse to in cases of this kind and he stated the grounds on which his opinion is based. Finally, the author noticed a set of cases which he regarded as exceptional and not easily explained.

For instance, a case appears to be suitable in all respects for lithotripsy, and goes on for some time favorably, when suddenly, and without any discoverable cause, an unfavorable condition sets in with rigors and irregular fever: irritability of bladder, etc. Here the author recommended that the operation should be suspended and lithotomy performed, if medical treatment should fail to give relief. The general rule which the author drew from his observation is, "That the operation of lithotripsy, when commenced with a due regard to its indications, may be continued until the surgeon feels convinced that any further perseverance must endanger life; when this conviction has been arrived at, the author thinks that lithotomy should be performed without delay; but he insisted that the necessity imposed on the surgeon was, having arrived at a correct diagnosis of the nature and effect of the obstacles he has to encounter, he should weigh the latter against the patient's power of resistance, and if the former prevailed the scales should be turned by throwing in lithotomy."

(C) CONCERNING THE UPPER EXTREMITY.

ART. 202.—*Excision in Gunshot Fracture of the Humerus.*

By M. OLLIER.

(*Medical Times and Gazette*, February 24.)

At a recent meeting of the Lyons Society of Medicine, M. Ollier read a memoir on "Excision of the Diaphysis of the Humerus after Fractures from

Gunshot." This he had practised in three cases during the late campaign on the Loire, removing nine, seven, and six centimetres of the bone; and all the patients did well. In one of these the excision of six centimetres was performed on the upper third of the humerus, below the head, which firmly united with the rest of the bone, and the uses of the limb were completely re-established, the shortening which remained being only twenty-five millimetres.

The cases of gunshot wound of the humerus, M. Ollier observed, in which his operation is indicated are comparatively rare, and expectation should be the general rule. It is in comminuted fracture, with denudation of the periosteum and confusion of the medulla, and especially when the projectile remains amidst or in the vicinity of the fragments, that intervention should take place. At a later period inflammation and pain may also render excision necessary; for one of the immediate consequences of the operation is the disappearance of the pains, to the great relief of the patient. M. Ollier's mode of procedure is entirely different from the old one for the removal of fragments of bone; for, in spite of the comminution, a true sub-periosteal excision should be attempted. Each fragment is successively seized and separated from its periosteum, so that at last a tolerably complete periosteal sheath is obtained, in spite of its lacerations opposite the seat of fracture. The bone, in fact, being a very compact body is broken into a number of fragments completely separated from each other, while the more supple periosteum resists. It becomes more or less torn, and remains adherent to the soft parts and the fragments especially in young subjects. The modifications produced in the periosteal adhesions by age are indeed considerable, and are very important as regards operations. When the splinters have been removed, the fragments must be excised to beyond the extent of the fissures. If, however, the fissure extends to the spongy tissue, and the subject is young, it need not be pursued if the soft parts are intact; but when it penetrates to a joint, an articular excision must be executed. After an excision, the ends of the bone should be brought nearer to each other, in proportion as there is little expectation of bony reproduction, which is less in proportion to the age of the patient. The silicated bandage favors the reparative process, and may require to be continued for months. In answer to a question as to the prevention of stiffness of the joints ensuing, M. Ollier replied that so long as the inflammation persists, the bandage must be left on, it being indeed the best means of limiting the traumatic inflammation; and whenever it is renewed, movements should be imparted to the elbow and shoulder. The apparatus may, in fact, be left on without renewal for a month or five weeks, and ankylosis will usually be avoided, unless the fracture is too close to the joint. In conclusion, he repeated that expectation is the rule, and that excision is only suited for particular cases. It is especially indicated when, some time after the accident, complications arise; while, when there is intra-articular fracture, it should be performed immediately. The influence of age must also never be forgotten.

ART. 203.—*A New Method of Reducing a Dislocation of the Humerus into the Axilla, with Reference to the Anatomy of the Shoulder-Joint.*

By E. P. BENNETT, M.D.

(*The Medical Record*, March 13.)

Since Dr. Bennett has adopted his method, which he calls the anatomical method, and which he claims as exclusively his own, he has never failed in a single instance of reducing this dislocation by the tractive force of one hand, and this after all the other methods had been tried and failed.

Dr. Bennett places the patient upon a common chair. He passes around his body, below the arms, a broad strong towel, the ends of which are given to a stout assistant. The next step, and the most important of all, is to firmly fix the scapula. "Without this precaution," the author writes, "you will be pretty sure to fail, pull as hard and as long as you please. To fix the scapula, I direct one intelligent assistant to place the ball of the hand firmly against the

acromion process. I then tie a handkerchief around the arm directly above the condyles, and make in it a loop for my right hand, then, with the arm hanging down closely to the body, I pull gently and steadily directly downwards, and, with my left hand in the axilla, the bone slips easily and quickly into place. Now in this dislocation the head of the bone lies under and in contact with the neck of the scapula, and if by any means you can depress the head of the bone to the extent of one-eighth of an inch, or even less, there is nothing to prevent your gliding the bone easily into place, and that, too, without injuring any of the joint structures."

ART. 204.—*Fracture of the Humerus, with Laceration of the Brachial Artery; Mortification of the Limb; Amputation at the Shoulder-Joint; Recovery.*

Under the care of Mr. JAMES LANE, at St. Mary's Hospital.

(*The Lancet*, June 1.)

The following case is worthy of record as an example of the not very common occurrence of laceration of the main artery of a limb associated with a simple fracture:—

On December 12, 1871, C. E., aged thirty-nine, drayman, was thrown from his cart, the wheel of which passed over his right arm. He applied at the hospital, and the humerus was found to be broken at about its middle; but as nothing unusual was then observed, splints were applied and he was sent home. The next morning he came to the hospital in great pain; the splints were removed, and the arm was found to be greatly swollen, tense, and discolored, evidently from an enormous ecchymosis; the forearm and hand were œdematous and cold, the pulse could not be felt at the wrist, and the fingers were numb. He was immediately admitted, and placed in bed; the limb was supported on a pillow with the forearm and hand enveloped in cotton-wool, while cold lotion was applied to the arm with a view to check, if possible, further effusion.

For the first two or three days it was hoped that the limb might be saved, for the swelling seemed somewhat less, the hand was not so cold, there was more sensation in the fingers, and the constitutional disturbance was trifling. These favorable signs, however, did not continue; large bullæ formed all along the limb; the forearm and hand, which at first were simply œdematous and slightly reddened, became dark-colored and evidently gangrenous, emitting a very fetid odor; and on the 21st it was obvious that amputation could no longer be safely delayed, especially as there was now considerable constitutional irritation, his pulse being 120, and his temperature 103°.

Operation (December 21).—The swelling extended as high as the lower border of the axilla, where it ceased somewhat abruptly, and the skin showed signs of mortification up to the same level. It was clear, therefore, that nothing short of amputation at the shoulder-joint would suffice. This was accordingly done by the "oval" incisions, commencing opposite the acromion and diverging to the anterior and posterior margins of the axilla. Anterior and posterior flaps were dissected back, and, the capsule being exposed, the joint was cut through from above; the operation being completed by the division of the vessels, nerves, and integuments in the axilla. The artery was not compressed above the clavicle, but was grasped from the wound by Mr. Owen before it was cut through, bleeding from this source being thus effectually prevented. The subsequent progress of the case was satisfactory. Union of the upper half of the wound took place by first intention, and with the exception of some suppuration at the lower part, and a small abscess over the scapula, which required incision, nothing worth noting occurred to interfere with his recovery. He left the hospital February 2, 1872, in good health and condition, with the wound soundly healed.

On examining the limb after removal, a large mass of putrid coagulum was found on the inner side of the arm, but the whole of the tissues from the axilla

to the bend of the elbow were infiltrated with blood, and were in a state of gangrenous disorganization. The humerus was fractured obliquely downwards and forwards at its middle, and the sharp end of the other fragment had torn the brachial artery completely across. The median nerve, however, had escaped injury. The hand and forearm were also gangrenous throughout, but the swelling of these parts, which was very great, depended entirely on serous infiltration. The effusion of blood did not extend below the elbow. The incisions made for the amputation only just cleared the gangrenous parts.

ART. 205.—*Axillo-Subclavian Aneurism treated by Pressure on the Cardiac Side of the Sac; Sloughing of the Integument and Deep Tissues Around the Sac; Recovery of the Patient; Partial Cure of the Aneurism.*

Under the care of Mr. GAY, at the Great Northern Hospital.

(*The Lancet*, February 10.)

The following case, to which there is only one parallel (as regards treatment), in Mr. Poland's tables of subclavian aneurism, is of great interest, showing as it does the advantages and the dangers of long-continued pressure at the root of the neck.

The patient was a strong hearty man, aged forty-five. He had a tumor (presenting all the characteristics of an aneurism), about the size of a Tangerine orange, at the root of the neck on the right side. The aneurism was partly covered by the clavicle. The anterior wall was very thin. Pressure on the subclavian artery caused arrest of the pulsation in the aneurism, and in the radial artery of that side. The patient had noticed the tumor for about six weeks only; but for six or eight months past he had been troubled with rheumatic pains and numbness in the right arm and shoulder.

After much consultation it was determined to try pressure on the cardiac side of the aneurism. This was commenced on the 14th of October, 1871, and was at first simply "digital," being maintained, without intermission, by relays of students and others, who all took a deep interest in the case. It was soon found advisable to substitute Mr. Cole's compress for the finger. This is a T-shaped instrument, provided with a soft pad, about the size of the end of the finger, at the bottom of the perpendicular limb, by which pressure is made on the artery. This perpendicular limb is joined to the horizontal limb (on which the compressing hand rests), and is provided with delicate springs, so that the pressure can be adjusted to the necessities of the case with the utmost nicety.

In this way the pressure was maintained, with brief periods of intermission, for four days and nights. The pressure caused considerable suffering to the patient, numbness in the hand, and an aching pain along the course of the ulnar nerve, especially where it passes behind the inner condyle of the humerus. These symptoms were relieved by the use of morphia and chloral. When the pressure was taken off, the pulsations in the aneurism and radial artery were nearly extinguished, and the bruit in the aneurism had almost subsided. It was intended to renew the pressure, but it was found that the scarf-skin was loosened, and the skin beneath it was moist and of a dusky color. Erysipelas now set in, and began to spread in every direction, but most rapidly over the aneurismal sac and towards the shoulder. The constitutional symptoms became very grave; the temperature was subject to great variation, alternating between 96° and 102°; the tongue was dry, the pulse quick and weak, and the face dusky. Sloughing commenced, and ultimately invaded, not only the skin, but the deep tissues as well in the neighborhood of the sac, involving the deep fascia, and destroying the anterior belly of the omo-hyoid muscle. From this part matter and sloughy tissue welled up, and exhibited movements corresponding with those both of the artery and chest. On the third day of these symptoms he was attacked with pneumonia of the right lung, which it was feared might be pyæmic. On the eighth day the symptoms abated, the wound began to granulate,

and by the end of eight weeks it had cicatrized, and he was restored to tolerable health.

On examining the aneurism, it was found still to exist, but the sac was smaller and thicker, and appeared to have shifted somewhat towards the shoulder. On its distal side pulsation could be felt as of a large artery. Pressure on this vessel, as well as on the subclavian on the cardiac side, stopped the current through the sac and through the radial, and altered the character of the bruit. The force of the current through the sac and down the radial was considerably lessened.

It was observed that during the time the pressure was maintained and for several weeks afterwards, the finger-nails on that side ceased to grow, and that during recovery the back of the wrist and lower end of the forearm became covered with hair. The superficial veins have been constantly much more filled than those of the opposite limb.

ART. 206.—*Account of a Case of Resection of the Shoulder and Elbow Joints in the same Arm, for Gunshot Injuries.*¹

By WILLIAM MACCORMACK, F.R.C.S., Assistant-Surgeon to St. Thomas's Hospital.

(*Medical Press and Circular*, March 27.)

This paper detailed the history of a French soldier who had been wounded at the battle of Sedan. The right arm in the region of the shoulder and elbow joints, was extensively injured, the soft parts being much lacerated and the bones extensively comminuted by a shell explosion. The question arose whether it was at all possible to save the limb. Rather, however, than perform disarticulation at the shoulder-joint, Mr. MacCormack determined to excise both the shoulder and elbow-joints—an operation hitherto, he believed, unique. The patient narrowly escaped death from pyæmia, but he afterwards made a satisfactory recovery; and the interest of the case centres in the amount of usefulness subsequently enjoyed by the limb. Some portions of necrosed humerus have yet to come away, and in the deltoid region a sinus still remains. The elbow is soundly healed, and regeneration of the excised bones has taken place. The operation was performed superiosteally; and in the after-treatment the limb was supported on carefully-adjusted cushions—a method Mr. MacCormack prefers in most cases to employment of splints. The shoulder can now, after an interval of eighteen months, be moved freely backwards and forwards, but not raised from the side, the deltoid muscle having been almost completely destroyed by the original injury. Flexion, extension, and rotation are very perfect in the elbow, and the usefulness of the hand is nearly as good as before. Four inches of the upper end of the humerus, very greatly comminuted, were removed; and a long piece of ulna, in addition to the head of the radius and the articulating condyloid surface of the humerus, was taken away. Mr. MacCormack considers that he may fairly classify this case as one of successful double resection of the two principal joints in the same upper extremity.

(D) CONCERNING THE LOWER EXTREMITY.

ART. 207.—*Wound of Knee-Joint; Perfect Recovery without Suppuration under Antiseptic Dressing; Painless Distension of the Joint with Solution of Carbolic Acid.*

Under the care of Mr. COUPER, at the London Hospital.

(*The Lancet*, February 10.)

The following remarkable case is, we think, calculated to impress surgeons with the soundness of some, at least, of the doctrines promulgated by Professor

¹ Read at a Meeting of the Royal Medical and Chirurgical Society, March 12th.

Lister. In his address delivered last year at Plymouth, the Professor said: "The freedom with which joints may be opened in an antiseptic atmosphere, followed up with antiseptic dressing, is among the most striking and valuable circumstances of this treatment." What follows seems, as far as a solitary case can do so, to bear out the truth of this statement, and to present an example which is well worthy the consideration of surgeons, be they followers of Pasteur or Pouchet. We should be particularly glad to give insertion to parallel cases, whether treated antiseptically or otherwise.

On the 17th of October, J. S., aged seventeen, while chasing a lad who carried in his hand the iron of a carpenter's plane, received a wound about an inch and a half long, close to and parallel with the outer border of the left patella. He reached the hospital about half an hour after the accident. Mr. Curling, the house-surgeon, found that the sharp angle of the instrument had entered the joint, making an aperture which, although less extensive than the skin wound, yet easily admitted the tip of the (previously carbolized) fore-finger far enough for him to feel the articular surface of the patella. Having ascertained that no foreign matter was lodged in the joint, he injected as much of the saturated watery solution of carbolic acid (one part of acid to nineteen of water) as the joint would hold. A large metal syringe, provided with a tapered bone nozzle, was employed for this purpose. The nozzle was introduced so as to plug the aperture in the joint completely. When the piston was then forced down the loose synovial bag underneath the tendon of insertion of the quadriceps muscle was fully distended. There was thus no doubt that the solution was brought in contact with the entire surface of the articulation. Before the syringe was used the skin wound was closed by a continuous suture of carbolized gut, with the exception of a portion sufficient for the nozzle to enter, in which the stitches were left unfastened. By this means the skin was plugged round the nozzle, and the solution retained for a minute or two. The latter was then allowed to escape, and the remaining stitches were secured. As all bleeding had ceased spontaneously, it was deemed unnecessary to provide a drain for imprisoned fluid; the wound was therefore closed from end to end. The knee was then enveloped in about sixteen layers of carbolized muslin, extending some inches above and below the wound. A small piece of green silk protective was interposed between the wound and the gauze to prevent irritation of the raw surface by direct contact of the carbolic acid. Finally, the limb was bound to a straight posterior splint to keep the knee at rest.

On the following day the lad was free from pain, even when the knee was slightly pressed. He had slept and eaten as well as usual. On removing the dressing under carbolic spray (1 part of acid to 99 parts of water), the joint was found very slightly puffy, but there was no fluctuation which the fingers could appreciate. When questioned as to the effect of the injection, he replied that the knee "felt hot and burning for about ten minutes after, but had ever since been quite comfortable." He treated it as a light matter, and was positive that no vestige of discomfort remained fifteen minutes after the injection. Six hours after it the temperature of the axilla was 100.5°. Eighteen hours after it had reached its maximum, 101°. Thenceforward it steadily declined, and was normal on the evening of the third day.

On the 19th, Mr. Couper again removed the dressing, not because a change was needed, but in order to satisfy himself as to the condition of the knee. The wound and the dressing were perfectly dry. They were in the same state when re-examined on the 21st. There was no redness at the wound; its lips had adhered. As the gut stitches caused no irritation, they were not disturbed. On the 28th they formed, with some dried serum, a thin brown scab, adherent to the wound. A few days later (November 1st) this dropped off, leaving a perfect scar. As a precaution the splint was not removed until November 1st. The knee could then be flexed without pain. The lad was kept under observation until November 16th, when he was discharged with perfect motion in the knee. During the last week of this time no trace of swelling remained, and he was up all day, and occasionally out of doors.

ART. 208.—*Report of a Case of Spontaneous Gangrene of Both Feet.*

By FREDERICK J. GANT, F.R.C.S., Surgeon to the Royal Free Hospital.

(Medical Times and Gazette, May 11.)

At a meeting of the Clinical Society of London on April 12th, Mr. Gant related a case of spontaneous gangrene of both feet in a messenger-boy, aged sixteen, who, when he was about seven years old, had a decidedly bluish aspect, was always breathless, and complained of feeling cold even in warm weather. The boy himself stated that he had suffered from shortness of breath, with occasional dyspnoea, ever since he could remember; otherwise the boy's general health had remained unaffected. Latterly he had been much exposed to cold during very severe weather. After a day's exposure, during the night, when in bed, his feet "burned very much;" and the next morning the great toe and two adjacent toes of both feet were nearly black, and quite insensible. In this state he walked to the Royal Free Hospital. After admission, gangrene progressed until it reached the dorsum of both feet, presenting to some extent the appearance of senile gangrene. But the livid blueness and œdema of both legs up to the knees contrasted with the pale, shrunken condition of the legs as observed in senile gangrene; and the gangrene itself, at this early stage, was more succulent or moist than dry. Pulsation was quite free in both the tibial arteries of the feet. A physical examination of the chest was made by Dr. Cockle. The heart's action was feeble but regular, and unaccompanied by any appreciable murmur. Pulsation could be readily seen in both carotids, and a diffuse forcible pulsation in the external jugular veins. Pulse at the wrist 27 per minute, small, feeble, irregular. The only pulmonary signs were emphysema, and slight bronchitis at the bases of both lungs. Respiration was oppressed—16 per minute. The temperature in the axilla was—morning 103.8°, evening, 101.6°. The urine was scanty and high-colored, with a copious deposit of grayish-brown lithates and of albumen. The patient was lethargic, dull of understanding, and he spoke with a stridulous voice and broken articulation. Occasionally, when the heart's action became very feeble, and dyspnoea very urgent, fits of unconsciousness occurred, accompanied on one such occasion with epileptic convulsive movements of the upper limbs and face, this state lasting two hours. A line of demarcation having formed on the dorsum of the feet, Mr. Gant performed double amputation by modifications of Chopart's and Hey's operations. Both stumps united soundly in a week. But the cardiac and pulmonary conditions recurred at intervals with increasing severity; and in a fortnight the patient sank into a state of coma, and died quietly. The post-mortem examination showed that the heart in its right half was the seat of disease, the origin of which would seem to have been at a very early period of life. The right auriculo-ventricular opening was enlarged sufficiently to admit two, or even three fingers, but the three segments of the valve were healthy; the auricular cavity was dilated and distended with blood to more than twice its natural size; the wall of the auricle, not thickened in any part of its extent, was, between the muscoli pectinati, reduced to a membranous state; the foramen ovale was entirely closed; the right ventricular cavity was also somewhat enlarged, and equally distended with blood, but the wall was not hypertrophied. The pulmonary valves were quite healthy. On the left side of the heart no morbid condition was discovered, either as regards the cavities or the valves. Recent pericarditis had occurred. Both lungs were emphysematous, but the texture generally was much congested, and the bronchial tubes were engorged throughout with frothy mucus. Recent pleurisy had taken place on both sides of the chest. The abdominal viscera generally were much congested, and the liver and kidneys considerably enlarged by interstitial deposit, passing into fatty degeneration. The brain exhibited marked venous congestion. Mr. Gant was disposed to draw the following two conclusions: I. That the gangrene of both feet, depending evidently on systemic venous congestion, was caused by the enlarged state of the right auriculo-ventricular opening; and the accompanying

dilatation of the auricle and ventricle, being thus essentially cardiac, although the immediate and exciting cause might have been exposure to cold. 2. That the immediate cause of death was pericarditis, pleurisy, and more particularly capillary bronchitis.

ART. 209.—*On Compound Fracture of the Patella.*

By ALFRED POLAND, F.R.C.S.

(*Medico-Chirurgical Transactions*, vol. liii.)

The following are the conclusions to which Mr. Poland is led by a study of the cases which he has collected :—

"1. That compound fractures of the patella are not necessarily mortal injuries, and do not require immediate amputation or resection, except when complicated with other injuries of the joint structure. In this latter case the injury done to the integuments and surrounding tissues is such that amputation is preferable to excision.

"2. In all cases we should attempt to save the limb, and adopt the ordinary treatment as for simple fractures of the patella, whether comminuted or otherwise. The wound should be accurately closed by sutures, but employed with judgment; strapping and relays of ice should be constantly used.

"3. That when suppuration fully sets in, and which must always be expected in severe lacerations and in patients of unsound condition, we must not hesitate for one moment to make free incision into the joint. Drainage tubes may be used, but they are unnecessary.

"4. Amputation or resection is only to be resorted to when the powers of the patient fail to repair the injured joint.

"5. The extraction of fragments has been resorted to both primarily and secondarily with success; but, as a rule, detached and loose portions had better be removed at once, providing this does not necessitate further injury to the joint; if attached and firmly adherent, they had better by far be left to take their chance of coadhesion, or to be thrown off and detached during the suppurative process."

ART. 210.—*On Ingrowing Toe-Nail.*

By JOHN WOOD, F.R.S., F.R.C.S., Surgeon to King's College Hospital.

(*British Medical Journal*, June 8.)

Mr. John Wood, in removing an ingrowing toe-nail, at King's College Hospital, on Friday, May 24th, said that this affection, which seemed trivial, was of more consequence than was supposed; it was a serious matter to the patient, and caused him much pain. The principal cause he conceived to be the absurd but fashionable custom of wearing very small-toed boots; and the next, the false economy of wearing much-darned stockings. The savage races were never troubled with ingrowing toe-nails because they had never been tempted to wear narrow-toed boots. The commonest mistake made in the case was to blame the nail for the pain; but it was not the nail that was at fault, but the skin surrounding it. This became thickened and ulcerated, and grew until the nail was overlapped. The nail became subsequently bent and grew irregularly; but it was the highly sensitive and rapidly growing skin that gave the pain. Mr. Wood removed the half of the nail of the patient present, after it was frozen by the spray. He recommended broad-toed boots, scraping the centre of the nail thin, or a V-shaped incision of the nail, and caustic to any ulcer present, in cases not so bad as the one now dealt with by excision.

ART. 211.—*Chronic Disease of the Knee-Joint; Osteo-Myelitis of Femur; Amputation of Thigh in Upper Third.*

Under the care of Mr. C. S. JEAFFRESON, at the Hospital for Sick Children, Newcastle-upon-Tyne.

**(British Medical Journal, June 8.)*

The notes are reported by Mr. George Ward.

A. F., aged 9, a highly strumous and emaciated child, had suffered more or less for two years with disease of the knee-joint. Eight months before admission she was in the hospital, when several abscesses were opened. It was thought at that time that resection might be performed with success; but the mother refused to allow any operation, and removed the child. On her re-admission the lower limb was greatly atrophied, semiflexed upon the thigh, and partially dislocated backwards. There were no fewer than seven openings in the neighborhood of the knee-joint, all discharging large quantities of pus; and the whole of the femur was enlarged, especially in the lower two-thirds. The child's general condition was that of extreme exhaustion. Amputation was performed at the upper third of the thigh by means of an anterior and posterior flap cut from without. The bone when divided was seen to be enlarged, its external compact layer thinned, and the internal cancellous tissue expanded and softened; it had, in fact, all the appearances of osteo-myelitis. The stump was carefully but not antiseptically dressed. Union took place almost entirely by the first intention; no pus at any time escaped except in the course of the ligatures at the inner corner of the wound, and in less than a fortnight the stump was perfectly healed.

ART. 212.—*On Popliteal Aneurism.*

By COOPER FORSTER, F.R.C.S.

(Medical Times and Gazette, February 24.)

At a meeting of the Clinical Society of London, on January 26th, Mr. Cooper Forster read a paper "On Two Cases of Popliteal Aneurism," the treatment of which, though not novel, was calculated to elicit the opinion of the Society on a most important point of surgical practice. The first case was that of a laborer, aged thirty-five, sent to the author by Dr. Poole, of St. Paul's Cray. An intemperate man, with good general health, he had noticed ten days before admission into the hospital, pain in his left knee, followed in a few days by swelling. He came under notice with all the signs of popliteal aneurism. The treatment, which throughout was by means of instrumental pressure and flexion, extended over an interval of fifty-five days. In the first instance, this was applied by a dead weight on the artery in the groin, and by a screw-tourniquet, without chloroform. A Reid's compressor was subsequently used in place of the weight. The femoral current was by this means entirely arrested for some hours each time; but this failed to produce the desired effect, and chloroform was afterwards administered, while the pressure was kept up for periods which varied in duration from nine hours and a half to four hours. The sac gradually became smaller and harder, but pulsation had not finally ceased till December 23. The man left the hospital well on January 3. The second case was that of a gentleman, aged thirty-four, strong and hearty, given to athletic exercise, who felt pain in the calf of the right leg five months before he first came under notice; and two months later he had pain and pulsation in the popliteal space. Two months more elapsed, during which time he walked about and took no notice of his leg, and then he consulted a surgeon, who applied instrumental pressure to the sac itself. This gave excruciating pain, and no improvement resulted. When the author saw him, the popliteal space contained an aneurism the size of a small orange, in which pulsation was very strong, and not arrested

by flexing the leg to the utmost. Much swelling of the leg, moreover existed, with excoriation of skin, the result of the previous treatment. The treatment was by pressure—instrumental for the first three days, by means of weights in the groin and a tourniquet in the middle of the thigh; this produced no effect. Digital pressure was then resorted to, three of the patient's friends compressing the femoral alternately for periods of ten minutes, the author of the paper sitting with his hand on the tumor to guard against the return of pulsation. The aneurism was cured by this means in three hours and a half. Mr. Forster thought that, to insure success, the great point to be attended to was that the current of blood through the sac should be completely arrested, and this in opposition to the view first held by Bellingham. Another question also arose, as to when pressure, if adopted, should be discontinued in favor of ligature, and as to when it was inadvisable in the first instance. The author, from a review of his whole experience in this disease, questioned whether pressure would not always be successful if tried with patience, and carried out with care. And for his part, he expressed the opinion that the disadvantages, even where chloroform was necessitated for long periods, were so insignificant and the *primâ facie* physiological arguments so strong in its favor, that he did not hesitate invariably to try it, and as yet he had done so always with success.

ART. 213.—*Amputation of the Thigh for Disease of the Knee-Joint.*

Under the care of Mr. HENRY SMITH, at King's College Hospital.

(*The Lancet*, June 1.)

It is such a rare thing to witness an amputation of the thigh for disease in the joint alone at this hospital, that we record the following case, which presented certain exceptional features that, in the opinion of Mr. Smith, precluded any other operation.

The patient was a young man, aged twenty, who had suffered more or less from disease of the knee for three years, and had been under various treatments in hospitals and elsewhere, sometimes improving and then retrograding. He was admitted into King's College Hospital in March, at which time there was considerable tumefaction of the knee and wasting of the thigh; there was severe pain on pressure over the patella and the external parts of the joint; frequent painful starting of the limb occurred at night; and the patient was much reduced in general health. Mr. Smith ordered local and general treatment, with the hope that ankylosis might occur; but the symptoms continuing, it was resolved that excision of the knee should be performed. A very careful examination of the patient, however, was instituted, and it was ascertained that the urine contained a large quantity of albumen. Under these circumstances the operation was deferred, with the hope that the quantity of albumen might diminish; but no material change occurred in that respect, and amputation was determined upon and performed, the ordinary flap operation being executed. On examining the joint, it was found to be in progress of entire disorganization, the cavity being filled with purulent matter, the cartilages ulcerated, and the synovial membrane degenerated.

Mr. Henry Smith, in his remarks, stated that his pupils would be surprised to see an amputation of the thigh performed for disease of the knee-joint alone in a young man, and, in fact, he had had a great struggle to bring his mind to perform this operation; but with the evidence they possessed of the presence of degeneration of the kidney, he considered it would be highly imprudent to perform excision of the knee-joint. For although he believed the shock of the two operations was about equal, there could be no doubt that in the long run there was a greater call upon the constitutional powers after excision. He had been educated in the principle that amputation of the thigh should not be adopted for disease of the knee-joint alone; but there were exceptions to this rule, and the case before them presented one of these exceptions. Much as he regretted having had to adopt the step, he was firmly convinced that he had done wisely in rejecting excision, whatever the result might be.

ART. 214.—*On Excision of the Knee-Joint.*

By JAMES SPENCE, F.R.S.E., Surgeon to the Queen in Scotland, Professor of Surgery in the University of Edinburgh.

(“Lectures on Surgery,” parts iii. and iv.; Edinburgh, 1871.)

On the subject of excision of the knee-joint and its advantages, as compared with amputation, Mr. Spence says:—

“Excision of the knee-joint, so far as the operation has yet been tested, can scarcely contrast favorably with amputation at the lower part of the thigh for disease of the knee-joint. I am aware that favorable comparisons have been made by contrasting cases of excision of the knee-joint with amputations of the thigh generally; but the comparison, to be a fair one, must be between cases of amputation performed for diseased conditions similar to those for which the excision has had recourse to. My experience of amputation has shown me that not only the extent of the limb removed, but also the nature of the disease for which it is removed, make a great difference as to the success or fatality of the operation, and that amputation in cases of simple strumous disease of the knee-joint affords the greatest amount of success; and this is the class of cases in which we perform excisions. With all my feelings in favor of excision of the knee-joint as a substitute for amputation of the thigh, I cannot help believing that in certain conditions it is more dangerous than amputation, and that the character of the operation is likely to be perilled by its being indiscriminately resorted to. In reference to an absolute advantage excision of the knee over amputation, as regards the results in successful cases, no one can doubt that, and I think the question now to be considered in regard to the comparative mortality of these operations is to endeavor to discriminate between the cases in which the one or the other of these operations presents the least risk of life. Here, as in amputations, it is difficult or impossible to gain much from mere general statistics. What we want to know in considering such a point is, all the circumstances of the cases operated upon which may have influenced the result, and hence the surgeon will learn more from, and naturally be more impressed with the result of his own cases, or of cases which he has opportunities of closely observing. My own experience of excision of the knee-joint is comparatively limited, and therefore in stating to you the results, any deductions I may draw from my cases are to be regarded as merely suggestive, not positive.”

ART. 215.—*A Case of Comminuted Fracture of the Leg; Resection and Suture of Fragments.*¹

By M. LETTENNEUR, of Nantes.

(*Gazette Hebdomadaire*, No. 2, 1871.)

An individual, aged eighteen years, was admitted into the Hôtel Dieu of Nantes, on July 10th, 1868. This youth had imprudently placed his hand upon a strap which was revolving round a flying wheel. The hand and also the clothes were seized, and the body was jerked into the air, falling at a distance of some metres. On admission the following lesions were made out: A fracture of the surgical neck of the left humerus; a contused wound, occupying almost the whole of the right side of the back, and involving the muscles; a comminuted fracture of the right leg, with a wound and protrusion of osseous fragments. The injured limb was placed on a splint, and moderate traction was made on the foot. The anterior tibial artery had probably been torn, as no pulsation could be felt on the dorsum of the foot. The posterior tibial was intact, and this fact, together with the youth and strength of the patient, induced

¹ Communicated to the Société de Chirurgie of Paris.

M. Letenneur to refrain from immediate amputation. In order to moderate the inflammatory symptoms, the limb was submitted to continuous irrigation for eight days; it was then dressed with charpie and camphorated alcohol and Labarraque's solution. The traumatic fever was not severe, and the patient retained his appetite. Simple cerate was applied to the wound in the back, and an immovable apparatus to the arm and shoulder. Purulent collections about the fracture in the leg obliged M. Letenneur to make counter-openings. The superior and inferior fragments of the tibia were much notched, and between were splinters of bone, partly imbedded in the muscles. A great number of these were removed, care being taken to separate the periosteum. On putting together these fragments, it was estimated that the bones of the leg would be shortened to the extent of three or four centimetres. There was a constant tendency in the superior fragment of the tibia to project outwards, and there was much riding posteriorly on the part of the inferior fragment. As this displacement could not be rectified by ordinary means, M. Letenneur resected the ends of the fragments, and united them by suture. The fragments were thus fixed tolerably firm, and formed in the centre of the limb an internal splint, around which callus might be deposited without any movement being able to destroy this process of reconstruction.

This operation was performed on the twentieth day after the accident. There was then a shortening of about seven centimetres. Considerable though circumscribed swelling subsequently took place at the seat of fracture. Pressure of the finger at this part caused crackling, indicating the rupture of osseous trabeculæ. This swelling at last acquired great proportions and inclosed the fragments and necrosed osseous splinters. M. Letenneur then feared the development of an exuberant callus, hollowed with abscesses, and constituting an interminable malady. In the month of October the callus had acquired some solidity, and the shortening was not more than four centimetres; the limb, therefore, had been elongated by three centimetres. This elongation would not have taken place at the seat of the fracture, as the metallic suture was still in place, and the corresponding fragments were not detached. Finally, in the month of February, the fragments united by the suture became loose, and were then withdrawn with the wire; together they were about eleven centimetres in length. The callus was very solid, but did not then permit the patient to walk. It is remarkable, states M. Letenneur, that the osseous suture applied to bones already dead produced no change in these, and that the openings made by the gimlet had exactly the same dimensions in February as they had when first made. This proves that metallic threads, when they cut gradually through osseous tissue included in the loop of the suture, do so through vital action, and not by mechanical force.

The patient remained in the hospital for several months, and after his discharge was readmitted, in order to have some small sequestra removed. When at last he was able to resume his occupation, the shortening did not amount to more than two and a half centimetres. M. Letenneur directs particular attention to the elongation of the bone in this case, which was sufficient to efface the consequences of a loss of substance amounting to seven centimetres. He excludes the sequestra which were removed at a later period, which taken together add a length of eleven centimetres. At this period the callus was solid, and its length was not altered in any sensible manner. The elongation, then, in this case had occurred at the extremities of the bones. In 1856, M. Baizean communicated to the Academy of Sciences a memoir, in which this phenomenon of pathological physiology was pointed out. In 1869, Langenbeck made a communication on the same subject to the Society of Medicine of Berlin.

ART. 216.—*On Contusion of the Sciatic Nerve.*

By Dr. LORINZER.

(Allgemeine Wiener Medizinische Zeitung, No. 43, 1870; Gazette Hebdomadaire, No. 43, 1871.)

"Cases of sciatic neuralgia, in which contusion is invoked with more or less reason as a producing cause are numerous, but cases of contusion of the sciatic nerve, in which traumatism is really the sole cause of the painful symptoms, are, on the contrary, very rare.

The first case reported by Dr. Lorinzer is complex; it was one of fracture of the neck of the femur, accompanied and followed by persistent sciatic pains; the other three cases, according to the author, were examples of contusion of the sciatic.

The subject of the first case was a strong man aged fifty-six years, who in skating fell upon the right buttock. The pain was so acute as to compel the patient to keep to his bed for some time.

"In the second case a woman of the same age had fallen off a stool; she could not get up without assistance, and was carried to bed. The pain was so intense at first that a complete examination could not be made, the least movement, and a touch merely over the injured hip produced extremely painful muscular contractions. On the following day the diagnosis was established.

The third case was one of a powerful man who slipped upon a piece of ice, and fell upon his buttocks; the ground was hard and frozen. He could not rise by himself.

The symptoms of contusion of the sciatic nerve were analogous in these three cases, and the progress also was similar.

Immediately the contusion is produced, there are acute pains along the course of the nerve; active or passive movements increase the pain so much that it becomes intolerable, and the patients refuse to be examined. These pains at first are felt more acutely at the posterior part of the thigh, but they may extend to the anterior and internal surfaces of the limb. They are relieved during absolute repose, but reappear with the slightest movement of the thigh, and are accompanied by very troublesome muscular contractions. After twenty-four or forty-eight hours the sensibility is sufficiently diminished to permit the necessary movements for an examination. Naturally, the surgeon endeavors in the first place to find out whether there be a fracture of the neck of the femur. It is to be remarked that in these various cases there was an outward deviation of the limb. Absence of abnormal mobility of the thigh and pelvis, and of crepitation during movement, and shortening of the limb, were the chief reasons for the diagnosis made by Dr. Lorinzer.

The treatment carried out by the author consisted in the patient's maintaining the horizontal position, the thigh being kept semi-flexed by means of a pillow. It was necessary to keep the patients in bed for six or seven weeks. The pain gradually ceased, but the muscular contractions, together with a sensation of formication, often returned. Finally, passive and active movements were undertaken progressively, and with prudence. The course of the affection is slow and troublesome, and the neuralgic pains may continue for a long time.

ART. 217.—*Report of a Case of Osteo-Sarcoma of the Femur.*

By JOHN CROFT, F.R.C.S.

(Medical Times and Gazette, May 11.)

At a meeting of the Pathological Society, on April 16th, Mr. Croft related the following case of osteo-sarcoma of femur: J. R., aged eighteen, in May, 1871, was the subject of a tumor as large as a fist on the front of the lower third

of the left tibia. It had been growing seven months, and appeared to be an osteo-sarcoma. The limb was amputated no higher than the tubercle of the tibia, at the desire of the friends. On section, the tumor was of a graduated ruddy color, was very vascular, and consisted of a soft structure, supported by a reticulum containing osseous spicules. The reticulum was composed of fibres and spindle-shaped cells, and in many places presented growths of bone, including canaliculi. The alveoli contained cells and nuclei of various forms—round, ovoid, polygonal, and even caudate. These were all multi-nucleolated, and many cells were multi-nucleated. The surface of the tibia was eroded, and the growth had invaded the medullary structure. The patient quickly recovered from the amputation, and returned to his employment. Four months after the operation he noticed that the knee had begun to swell. On March 15, 1872, he was readmitted into St. Thomas's Hospital with a knee-joint nineteen inches and five-eighths in circumference. A femoral gland was as large as a small egg. He was suffering severely, and the growth was increasing rapidly. On April 3 amputation at the hip-joint was performed, and the enlarged glands were dissected out. The patient had made an excellent recovery from the effects of the operation. On examination of the limb the tibia was found to be quite free from the disease. The joint had not been invaded. The growth appeared to have sprung from the condyloid extremity of the femur. Mr. Stewart, curator of the museum, had injected the tumor, but only partly succeeded—sufficiently to show great vascularity. Color of section varied from grayish-white to chocolate. Septa radiated from a small centre of cicatrix-like fibrous texture, forming a reticular structure. The stromal tissue and the cells and nuclei in the alveoli were composed of elements similar to those found in the first tumor. The same sort of osseous deposits were also observed. The gland tumor was soft and brain-like on section; it yielded a juice rich in round and ovoid nuclei, containing several nucleoli. After hardening in chromic acid, this manifested a reticular structure, which consisted of connective tissue. Mr. Croft drew attention to the fact that the growth had not recurred in the stump of the bone on and in which it had been situated. He thought the character of the stroma and the cell-shape distinguished it from encephaloid cancer.

ART. 218.—*On the Treatment of Fracture of the Femur in Infants by an Apparatus of Gutta-Percha.*¹

By M. GUENIOT.

(*Gazette Hebdomadaire*, No. 4, 1872.)

"Fractures of the femur in newly-born children are produced usually on delivery by traction on the superior part of the thigh in the fold of the groin, are generally situated in the superior third of the bone. The reduction is often easy; but the application of the retaining apparatus is very difficult; in the course of a few hours it has slipped and has to be applied again. How can this inconvenience be remedied? I attempted several means, but to no purpose. In one case, observing that the two fragments formed an antero-external angle, I decided upon applying a resistant belt round the pelvis, and fixing to this something which would press upon the angle of the fracture.

"On November 29th, 1871, a very weak infant, who had been born four days previously, was brought to me with a fracture of the right femur in its middle third. An apparatus previously applied to the whole length of the limb had caused, by its pressure, some œdema and redness. I replaced this by another and lighter one, formed of sheets of cardboard, but the movements of the limb, and the shortness of the upper fragment of the thigh-bone, rendered retention impossible. I endeavored, but in vain, to fix the apparatus to the root of the limb by means of some turns of bandage, which were passed round the trunk and carried as high as the shoulders; this apparatus, however, was always

¹ Communicated to the Société de Chirurgie de Paris.

found out of place on the following morning, and the fragments of bone formed an angle with the apex directed forwards and outwards. This inconvenience I had always met with in cases previously under my care. In the infant there is a great tendency in the thigh to be flexed upon the abdomen, the attitude which is taken before birth. To remedy this, I have devised the following apparatus:

"It is formed of a layer of gutta-percha, which one fashions so as to make two hollow splints solidly fixed together. The first, the dimensions of which are proportioned to the size of the child, is intended to cover the two anterior thirds of the circumference of the trunk; the second, of less dimensions, and joined at an angle to the first over the fold of the groin, is intended to surround the superior two-thirds of the fractured limb over the three antero-external fifths of its circumference. Thus it compresses the summit of the angle formed by the fragments, and maintains reduction. The rest of the limb is free, the genitals and the buttocks being also left exposed. In the infant which you see here, there is no tendency to displacement; the injured limb is not shortened. The callus is regular, solid, and the functions of the limb are entirely restored. With regard to the general health, in spite of the original debility, it has become as satisfactory as possible."

PART III.—MIDWIFERY.

MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

(A) CONCERNING PREGNANCY AND PARTURITION.

ART. 219.—*Anæsthetics in Midwifery.*

By DOUGAN CLARK, M.D.

(*American Journal of the Medical Sciences*, January.)

The general practical principles inculcated in this paper are expressed by the summary drawn up by Dr. Clark, as follows :—

"1. In perfectly normal labors of moderate suffering and duration, and without untoward symptoms of any kind, anæsthetics should not be resorted to.

"2. If the pains, even in an otherwise normal labor, be inordinate or protracted, especially in the second stage, anæsthetics is indicated.

"3. Irregular pains, exhaustive in their character, and inefficient, may be tranquillized by anæsthesia, and afterwards the action of the uterus is, as a rule more regular and efficient.

"4. Threatened convulsions may be averted, and those existing may be terminated, by a judicious use of anæsthetics. In cases of eclampsia, however, with congestion of the brain, or organic disease of that organ from any source, they are contra-indicated.

"5. Anæsthesia is proper in all obstetrical operations, whether manual or instrumental. It is useful in eversion, embryotomy, and the use of the forceps, and indispensable in Cæsarean section.

"6. Anæsthetics are among the most reliable means of overcoming rigidity of the perineum, os uteri, or vagina, especially when depending upon muscular excitement.

"7. Chloroform or ether may be employed for anæsthesia, of which chloroform is the most convenient, agreeable, and efficient, but ether in midwifery, as in surgery, is the most safe.

"8. Chloroform is much less dangerous in midwifery than in surgery, so far as past experience can determine.

"9. It is not necessary, as a rule, to bring about complete insensibility, but only sufficient to obtund the severity of the pains. The exceptions to this rule will readily suggest themselves to a thinking mind."

ART. 220.—*On the Necessity of Abstaining from Surgical Proceedings during Pregnancy and after Delivery.*¹

By M. TARNIER.

(*Gazette Médicale de Paris*, No. 13, 1872.)

On March 6, 1872, M. Tarnier presented to the Société a tumor of the size of the closed fist, which had been developed in the thickness of one of the labia majora.

Six months before the commencement of her pregnancy, the patient became aware of a tumor developing in one of her labia. Stationary, or nearly so for

¹ Communicated to the Société de Chirurgie.

a certain time, it then increased rapidly in size, and enlarged in all directions during gestation. After delivery it diminished slightly in size. It presented this peculiarity, that it was soft and gave the sensation of a liquid contained within it.

At this period many surgeons saw the tumor, and their opinions concerning it differed; some thought it was a cystic tumor, others, that it was solid, without specifying at the same time its real nature. They were however unanimous with regard to the necessity for an operation which was afterwards practised.

There was no difficulty in the ablation of the growth. Enveloped in lamellar cellular tissue, it was readily enucleated notwithstanding its prolongations in various directions.

The removed tumor was solid and had a fleshy aspect. Section showed a fibrous appearance, with a series of concentric bundles developed in the midst of the general mass. Microscopical examination showed that its composition was represented by bundles of smooth muscular fibres—in other terms that the growth was a myoma with unstriped fibres.

There was nothing peculiar in the nature of this tumor. It corresponded completely to ordinary facts, and by itself offered no kind of interest. It gave rise however to a discussion of great importance with regard to several points of practice.

Recalling the nature of the general physiology of pregnancy, namely, congestion of all the organs, and all the tissues in the neighborhood of the womb, M. Depaul mentioned several cases bearing upon this question of operating after delivery.

A young woman who was pregnant received a small wound on one of the labia majora, from which there was hemorrhage which rapidly became fatal. Here a varicose vein had been involved, and an injection made after death into the inferior vena cava flowed away in a stream from the small wound.

Another example. Hemorrhage occurring in a woman who was in the eighth month of pregnancy had rendered the patient extremely anæmic. Vagino-uterine plugging had been practised, but notwithstanding this the hemorrhage continued. In examining with great care the external organs of generation M. Depaul perceived a small black spot situated near the sheath of the clitoris. From this the blood had proceeded. A punctated canterization made with red-hot iron at once arrested the bleeding, and the woman was delivered without any accident a month later. Here again there had been a rupture of a varicose vein, and this was the source of the evil. On both the large and small labia a number of more or less prominent varicosities were observed.

Whether hemorrhage occurs from the surface or from the centre of the tissues (thrombus of the labia majora), the mechanism is the same. In both instances a rupture of varicose veins takes place, and the blood flows the more abundantly the more the fluid has become modified.

To the same order of facts, that is to say, to hypertrophy of all the tissues, it is necessary to refer, on the one hand, the frequent development of vegetations in pregnant women, and, on the other hand, the increase in size of tumors developed in the uterine tissues or in neighboring parts.

In 1869, M. Depaul brought before the Société de Chirurgie some examples in order to demonstrate hypertrophy of fibrous bodies of the uterus produced at the same time as hypertrophy of the whole organ, increasing with this, and afterwards simultaneously with the uterine tissue returning to their primordial condition. This increase in size affected tumors presenting an identical composition and tumors intimately connected with the organ itself, since hence they had their starting point. M. Depaul brought forward a series of arguments to render comprehensive the possibility of this fact and to favor its acceptance. Notwithstanding the opposition of some members the fact was accepted and no doubt remained in the minds of the majority.

And, indeed, what is more simple to comprehend? There is hypertrophy of all the elements of an organ, vascular hypertrophy, hypertrophy of its muscular fibres; and now a tumor is developed at its expense, having a structure abso

lutely similar, and it is supposed that the increase in size is not brought about by its elements.

In M. Tarnier's case there was an external tumor which could be distinctly felt; it increased simultaneously with the pregnant uterus, and diminished gradually in size after delivery. There could not be the least doubt; there was an absolute identity between the two series of facts; and yet it can be said that there was an excess of demonstration seeing that the tumor situated in the thickness of the labium had no kind of relation with the uterus. Augmentation of volume in one and the other case, here was the fact the demonstration of which is owing to M. Depaul.

Various authors in France and abroad have inquired whether tumors generally undergo a more rapid increase in size in consequence of pregnancy. Many examples have been cited, but none of these have hitherto proved very conclusive.

We arrive now at the practical questions which have been formulated very plainly by several members of the Society:—

1. Ought one to touch tumors or vegetations developed in the neighborhood of the genital organs during any period of pregnancy?

With the exception of M. Desprès, who does not hesitate to cut away and to cauterize vegetations, the other members, including MM. Depaul, Guéniot, Verneuil, and Tarnier, were opposed to any operative proceedings and advised abstention. Except in the case where the vegetation acquires enormous proportions, and attains the size almost of the fetal head, a growth of this kind ought not to be touched for two reasons. In the first place, there is a risk of causing abortion. A simple cauterization sometimes suffices to produce abortion with all its consequences. If, on the other hand, a cutting instrument be employed, there may be hemorrhage, and hemorrhage, as has been shown by the cases cited above, is always to be feared under these circumstances.

M. Verneuil advises a still greater reserve with these operations. Whenever a woman is pregnant one ought, according to this surgeon, to abstain from performing the least operation, no matter in what region of the body. Thus when a pregnant woman comes under treatment for an abscess of the vulvo-vaginal gland, he considers it necessary to let it open spontaneously and not to touch it with the bistoury. M. Verneuil quoted a case in his practice in which he had opened an abscess of the vulvo-vaginal gland. Lymphangitis was developed, abortion took place, and consecutive metro-peritonitis carried off the patient. Cases of abortion after operation are not rare. It generally takes place between the fourth and tenth day; it is necessary to inquire therefore what is its immediate cause. It is certain that if the operation had not taken place, expulsion of the product of conception would not have occurred; but still it is not to the operation itself that one ought to attribute the immediate cause of these uterine contractions, else they would take place during the first twenty-four hours. The contractions are due rather to blood poisoning, caused either by absorption of the putrid products which are developed on the surface of every wound, or to an erysipelatosus or lymphatic complication.

The abstention recommended by M. Verneuil has, however, its limits, and in the following, reported by M. Guyon, his conduct would have been identical. The patient was a pregnant woman who suffered from an abscess symptomatic of a lesion of the femur. She was visibly sinking; the appetite was gone, emaciation became more marked every day, and fever came on every evening. In consequence of all these symptoms M. Guyon decided upon intervening at the fifth month. The abscess was opened and drainage carried out. There was no subsequent hemorrhage, and abortion did not follow. Labor took place at the proper time, and the patient left the hospital quite cured some months later.

From all these facts this point of practice may be deduced, that one ought not to operate on a pregnant woman except in a case of absolute necessity.

2. For how long after delivery ought one to put off an operation upon women, either for removing a tumor or for curing a vesico-vaginal fistula?

It is above all things necessary that the tissues should be restored to their original condition, and that those which have undergone a kind of hypertrophy

in all their elements should become supple, firm, and elastic. One ought to wait for three months at least before attempting the slightest operation, and the true limit has been correctly indicated by M. Guéniot, who waits for the return of the functions.

Thus when one wishes to operate on a vesico-vaginal fistula or on a lacerated perineum, the physiological return of the menses should be waited for, so that the operation may be performed without risk of failure and of the sutures coming away prematurely in consequence of the excessive friability of the tissues. The same lapse of time should also be allowed whenever a tumor has to be removed, for the return of all the functions, a greater vitality on the part of the tissues, and a greater facility for their cicatrization.

ART. 221.—*On the Peristaltic Movements of the Uterus.*¹

By Dr. OSER and Dr. SCHLESINGER, Jun.

(*Allgemeine Wiener Medizinische Zeitung*, No. 51, 1871.)

Up to a recent period the teaching with regard to the peristaltic movements of the abdominal viscera was obscure, and latterly physiological views concerning the influence and causes of peristalsis have undergone divergence. Dr. Brown-Séquard has pointed out that the quality of the blood exerts an influence over the movements of the intestines. It has also been shown by Basch and Mayer that a venous state of the blood has a very stimulating action on the peristaltic movements of the intestines. With regard to the movements of the uterus the views of authors differ still more. Some make them dependent on the brain, some on the spinal cord, some on the sympathetic and ganglions, others on the sacral plexus. Dr. Oser, in order to determine this question, has experimented on a great number of dogs, cats, and rabbits.

The experiments consisted in tracheotomizing the animals and then administering curari. Respiration was kept up by means of a canula, and could be suspended at the will of the experimenter. The abdominal cavity was next opened, and the generative organs exposed. After these preliminaries had been completed the actions of various stimuli were investigated. In the first place respiration was suspended. After the suspension had lasted about ten seconds active contractions were excited, which commenced in the regions of the tubes and horns of the uterus and then spread over the whole organ. On restoration of the breathing these contractions ceased immediately and the uterus became motionless.

On compression on the abdominal aorta, respiration being kept up, contractions of the uterus came on after one hundred seconds, or towards the end of the second minute; on combining aortic compression with suspension of respiration, the contractions came on at the end of ten seconds, as occurred with suspension of the respiration alone. The influence of anemia was then investigated in producing hemorrhage, by opening the carotid artery. This experiment gave a similar result to that of aortic compression. From these investigations it resulted that the circulation and the quality of the blood exerted less influence on the contractions of the uterus than suspension of respiration. There was a difference, however, when the flow of blood to the brain and central nervous system had been interrupted by compression of the cerebral arteries. Then the uterine contractions came on in the course of a few seconds. It was clear that this centrum exerts the most important influence on the uterine contraction, and an influence which prevails even where the circulation in the uterus is not disturbed. Finally, in order to confirm the conclusion as to this influence, the cervical portion of the cord was divided between the atlas and axis.

From this experiment it was learnt that the influence of the brain, which had previously been so evidently active, ceased to be so immediately after the sec-

¹ Communicated to the Gesellschaft der Aertze, Vienna.

tion. From this experiment it was concluded that stimulus proceeds directly from the centrum, and not indirectly through the vagus or sympathetic.

It still remains to be found out in what part of the brain the centrum of this reflex action exists. It probably exists in the medulla oblongata, where, according to the universal consent of physiologists, the vaso-motor centrum is to be found.

ART. 222.—*On the Use of the Bowl during Delivery.*¹

By J. MATTHEWS DUNCAN, M.D.

(*Edinburgh Medical Journal*, June.)

The practice which Dr. Duncan wishes in this paper to insist upon appears to him valuable and highly important. A bowl, to be kept appressed to the hips if the woman lies on her back, to the upper and posterior part of the thigh if she lies on her side, in order to catch discharge of any kind which may come from the vulva.

Such a bowl the author has used for many years in his ordinary management of labor, and he has so high an opinion of its utility that he now describes it and its application.

The bowl may be made specially for the purpose; or an ordinary small wash-hand or sponge-basin, or a kitchen bowl may be used. The last is not so good as the others, as such are generally too deep, and not wide enough. The edge of the bowl touching the soft parts should be without sharpness, and smooth or flat. The bowl should be capable of containing two pints. It is advantageous to have two of them at hand, the one replacing the other when full.

Such a bowl is used at any or all times during the various stages of labor—to receive accidental or unavoidable hemorrhage; to receive liquor amnii gushing away or more slowly draining; to receive the liquor amnii discharged after the birth of the child; to receive the placenta; to receive post-partum hemorrhage.

The ordinary method of conducting labor is to receive all such discharges in cloths—a method which the author regards as very objectionable, and this character of it is demonstrated by the following arguments.

The bowl is preferable to the use of cloths because it is a cleaner plan. This advantage requires no proof, for it is plain that receiving discharges in an earthenware vessel, and removing them in it from the bed of the lying-in woman, must be incomparably cleaner than allowing them to run into and soak cloths, and soil the bed-linen and the clothes and person of the patient.

The bowl is preferable to the use of cloths because it is less expensive. The quantity of cloths frequently required when a bowl is not used is very great. In questions of practice, such as that now under discussion, it is chiefly the circumstances of the poor that have to be considered; and it is impossible for a poor household, or one of moderate means, to provide the quantity of cloths necessary for the proper management of a labor. In proportion as the quantity of cloths required is great in these circumstances, so also is great the mismanagement of the case; the mismanagement resulting not only in want of comfort, but also in disease and death. The poor form the great majority of our patients, and cannot afford money to provide a supply of cloths adequate to the requirements of an ordinary labor. The use of the bowl diminishes, to a very large extent, the quantity of cloths used.

The use of the bowl is preferable to the use of cloths because it promotes the salubrity of the surroundings of the patient by keeping off injurious damp and cold. Dampness and coldness go very much together in the circumstances under consideration. Both are not merely destructive of comfort, but are injurious, as promoting disease directly and indirectly. The evil may be incurred directly, for every one knows the dangerous action of cold during and after delivery. Now-a-days, with our better though lamentably imperfect knowledge

¹ Read before the Obstetrical Society of Edinburgh, 10th April.

of the diseases called collectively puerperal fever, we are not disposed to ascribe so much evil to cold as was formerly done, but there can be no doubt of its injurious potency. In the times referred to flourished the great William Hunter, and it is well known that he regarded injudicious exposure to cold as the chief cause of the disasters which befall women in childbed. But dampness may be very injurious in other ways, for it encourages decomposition and putrefaction. Liquor amnii, blood, meconium, are full of or composed of materials which are ready to decay or putrefy; whose incomplete removal, therefore, from the bed of the lying-in woman will lead her to being enveloped in an atmosphere full of noxious germs and other baneful products of decomposing animal matters. The use of the bowl facilitates the complete removal of everything that is damp about the newly-confined woman.

The use of the bowl is preferable to the use of cloths, because it enables the practitioner to form a better judgment of the quality and quantity of discharges. This is evident enough at once. But the very great advantage of knowing accurately the quantity of blood discharged in cases of hemorrhage is too important to be passed over without being insisted on. Nothing can exceed the vagueness of the ideas of practitioners in most cases as to the quantity of blood lost; and while it is, no doubt, supremely important to judge of the graveness of a flooding not merely by the quantity discharged, but by the effects of the loss on the constitution, as indicated by the symptoms, yet there can be no doubt of the very great value of information as to quantity in every case. In many cases indeed, such as those where constitutional symptoms are slight or absent, the ascertainment of quantity exactly is of primary importance, but ordinarily it is not so.

On these grounds Dr. Duncan strongly recommends the use of the bowl in the conduct of every case of labor. Restlessness on the part of the patient may diminish, nothing can destroy, its utility.

It is well known that the use of the bowl in cases of recent confinement has been recommended, and especially in cases of post-partum hemorrhage, with objects in view quite different from those simple and homely uses which alone are the subject of this paper.

ART. 223.—*Treatment of Rigidity of the Os Uteri.*

By A. B. ISHAM, M.D.

(*American Journal of the Medical Sciences*, October, 1871.)

In speaking of the therapeutical means upon which we may most confidently rely as safe, reliable, and entirely suited to the ends to be accomplished, Dr. Isham, for purposes of convenience, divides them into four classes:—

1. Those which may assist the inherent expansile power of the os.
2. Those which may bring about dilatation by pressure.
3. Those which may aid dilatation by producing muscular traction upon the os.

4. Those which may combine the aid of all the factors engaged in dilatation.

Therapeutic Agents of the First Class.—A continuous current of water, either warm or cold, applied separately or alternately, is an efficient means of producing an expansion of the os. It acts directly as an excitant of the circular fibres of the os and cervix, and it undoubtedly also secondarily brings into action the other forces of dilatation.

Barnes' water bag is a mechanical agent of great value, operating the same way as the water current, with the additional power of expanding pressure applied equally to all parts of the os.

The electro-galvanic current passed over the os furnishes another powerful stimulus to the nervi-motor function, acting remotely in the same way as the other remedies of this class.

Agents of the Second Class.—External pressure upon the abdominal walls over the uterus, if well applied, supplies a power lacking in the uterine muscles, forcing down the contents of the womb against the os and substituting an artificial pressure of considerable power for the natural one.

Forceps may be called to aid if there is sufficient dilatation for their introduction. They afford a mighty power in traction, supplying from without the force wanting within, and producing gradual dilatation over them.

Agents of the Third Class.—*Chloroform* has the weight of high authority as being one of the first therapeutical agents, administered by inhalation in the treatment of complicated labor. Carried to full anesthesia it perfectly relaxes every tissue in the whole system, and its efficiency in relieving spasm is manifest. It would thus enable the os uteri to be dilated by mechanical means, supplanting the place of all the natural forces of dilatation, and rendering delivery possible by instrumental aid. It has also another property, that of putting in abeyance the cerebro-spinal nervous sense, thereby undoing spasmodic action, while the play of muscular force may continue in operation. In this way it is a useful means of overcoming antagonism of uterine muscles. That chloroform is not applicable to debilitated subjects is apparent.

Sulphuric ether has properties analogous to chloroform, but it is considered by many to be the less hazardous remedy. They are both agents not to be trifled with, for, carried too far, they may produce paralysis of the heart or respiratory apparatus.

Hydrate of Chloral is a grand addendum to our therapeutic means. By its contact with the alkalies in the blood the chloroform is liberated. In doses of x grs. to ʒss, repeated, if necessary, it quiets spasmodic action, restores balance to muscular effort, gives ease and sleep to the patient, while it in no way interferes with the natural play of the uterine muscles—labor quietly proceeding under its influence. It is easier of administration than chloroform or sulphuric ether, much safer, and in most cases as efficient. Where there is a great gastric irritability, its use would seem to be contra-indicated.

Hypodermic injections of morphia have a speedy and reliable influence in suspending spasm and contraction of uterine muscles. They put a lock upon muscular action by rendering unconscious the muscular nervous sense, and thereby enable the muscles to recuperate their wasted energies. Morphia may be given *per os* for the same purpose; but where speedy action is desired, or where there is gastric disturbance, the hypodermic method is preferable.

Opium has the same action as its alkaloid, morphia, but the latter is preferable on account of its smaller dose, and its more certain and speedy action.

Agents of the Fourth Class.—*Rupture of the membranes*, where there is a deficiency of pressure against the os, constitutes a measure of great value—it enables the presenting part to engage advantageously, and furnishes leverage to bring into play the third factor of dilatation. This means may also operate upon the inherent expansile power of the muscles of the cervix by letting down the presenting part against it to produce excitation of the nervi-motor function.

Stimulants and tonics, which, through the blood, give tone and vigor to all parts of the system, as alcoholic liquors, extract of meat, ammonia, quinia, and strychnia (operating through the spinal nervous system), are all invaluable remedies in inertia uteri. They give new life to the dormant muscles, and enable them to make the traction needed, to produce pressure, and to stimulate the nervous influence—all the factors in the process of dilatation.

Galvanism has been alluded to as an agent of the first class. By its action upon the nervous influence it may combine all the agencies entering into the expansion of the os uteri. The current should be applied by one pole to the external surface of the os, while the other is placed over the abdomen in front of the uterus, and gradually swept around to the spine, over the sacrum and lumbar vertebræ.

Ergot of rye has a well-settled power of stimulating uterine contractions. Its mode of action, after much discussion, is not well ascertained. It may be administered by the mouth in any of the several ways in which it is prepared.

Tartar emetic, given in minute doses, often exerts a beneficial effect in relaxing rigidity of the os. Its physiological properties in this connection are not well understood.

ART. 224.—On *Edematous Elongation and Prolapsus of the Neck of the Uterus during Pregnancy and Labor.*¹

By Dr. GUÉNIOT.

(*Gazette Hebdomadaire*, No. 2, 1872.)

1. In some females there exists during pregnancy and occasionally at the time of delivery a special affection of the neck of the womb which, almost always overlooked, has not hitherto been the subject of any description.

2. This affection may be described under the title of *edematous elongation*, with prolapsus of the uterine neck, which indicates the principal constituent lesions.

Hyperæmia and turgescence of the organ, the transformation of its cavity into a long and freely patent canal, the rapidity with which these symptoms usually disappear, and the readiness with which they are reproduced under certain circumstances, represent other fundamental characters of the affection.

Ulceration of the os tincæ, prolapse of the vagina, thinning and flaccidity of the uterine walls, are likewise almost constant symptoms, as are also peripelvic pains, a feeling of general debility, and variable disturbance in micturition.

3. The causes of this morbid change of the neck of the uterus are complex; they are derived from certain anatomical dispositions of the organ, and from various circumstances which exercise over it a prolonged mechanical action.

4. Although a very rare affection, *edematous elongation* with prolapse of the neck is without doubt less exceptional than has generally been supposed. Many observers have wrongly confounded it with hypertrophic elongation or with simple prolapse, to which indeed it presents a great analogy, but from which it is essentially distinguished by special characters of the first importance.

5. The affection in question is to the patient a source of pain and inconvenience rather than of threatened danger, but it is dangerous to the infant, whose health and life it compromises by its predisposition to premature labor or to abortion.

6. The fitting treatment for this affection consists in returning the prolapsed neck and in keeping in place by means of a plug and bandage applied to the vulva. The administration of sedatives to relieve cough and of laxatives to avoid constipation are necessary auxiliary means. As the employment of pessaries is very dangerous during pregnancy, these instruments ought to be strictly proscribed, and likewise any operative proceeding which would affect the vagina or neck of the womb.

7. During labor the woman should be well watched, and care taken to prevent accidents. Finally, after delivery, the medical attendant should reduce the prolapsus, and advise a subsequent exceptionally prolonged decubitus.

ART. 225.—*Report of a Case of Ventral Pregnancy.*

By ALFRED MEADOWS, M.D.

(*Medical Times and Gazette*, January 6.)

At a meeting of the Obstetrical Society of London on December 6th, Dr. Alfred Meadows related a case of so-called ventral or abdominal pregnancy. The patient was aged twenty-two years, and was admitted under his care into the Hospital for Women, suffering from what had been previously diagnosed as extra-uterine gestation. The abdomen was enlarged to at least the size of pregnancy at full term, though she had only arrived at about the sixth and a half month. The fœtal heart could be heard. At the end of a week symptoms of collapse supervened from internal hemorrhage, and the patient died. The fœtus was found free in the abdominal cavity, its only attachment being by the umbilical cord to a kind of placental mass formed at the fimbriated extremity of

¹ Communicated to the Académie de Médecine.

the Fallopian tube. Dr. Meadows advocated a more frequent resort to gastrotomy in such cases, not so much with a view of saving the child or of rescuing the patient when collapse had supervened, but in order to anticipate that collapse, and, in fact, to remove the growth as soon as we could arrive at a true diagnosis. He intimated that possibly, in cases such as the one he related, and perhaps in certain others, it might not be necessary to remove the placental mass, as this might be gradually absorbed by a slow physiological atrophy after that for which it existed was removed.

Dr. Protheroe Smith said there was no doubt in his mind about the propriety of performing gastrotomy in such cases, but a difficulty suggested itself in the previous diagnosis. Seeing that almost always cases of extra-uterine foetation were fatal, he thought that even in the tubular form, if we could but improve our diagnosis so as to detect tubular pregnancy in its early stage, any operative interference which would afford the remotest prospect of life to the mother should be regarded as a duty.

Dr. Graily Hewitt believed that the operation of opening the abdomen ought to be performed when hemorrhage from rupture of an extra-uterine pregnancy threatened to be fatal; but the great difficulty was the diagnosis. With reference to Dr. Meadows's proposal to treat such cases, apart from hemorrhage, by such an operation, that was another matter, and, in considering it, it should be borne in mind that a certain proportion of supposed Fallopian pregnancies, as stated by Kussmaul, were really cases of pregnancy in a bicorned uterus, and such cases often did well if left to themselves.

Mr. Spencer Wells said that the propriety of operating when a woman was dying of bleeding into the peritoneal cavity, or of operating when her life was not in immediate danger, although extra-uterine foetation had been ascertained to exist, were very different questions. In the one case it might be the clear duty of the surgeon to try and save a patient at any risk from inevitable death; in the other case he would give full weight to the consideration that a spontaneous termination of extra-uterine foetation was not very uncommon. The structure might remain in the body harmless for many years, or pass away through the rectum, the vagina, or the abdominal wall. In a case reported by him the sac could not have been separated, though it would have been easy to remove the foetus and treat the sac by drainage.

Dr. Greenhalgh gave brief particulars of seven cases of extra-uterine foetation; three recoveries and four deaths. Of the former, in one the foetal bones were discharged through an abscess in the left groin; in another a full-grown foetus in an advanced stage of decomposition was extracted through an incision in the roof of the vagina, and in the third the liquor amnii was drawn off by a small trocar and canula. Dr. Greenhalgh said that, owing to the great fatality in such cases, he was of opinion that gastrotomy, as recommended by Dr. Meadows, might in many cases give the patient a better chance than by permitting the development of the foetus and secundines to progress, leading to the risk of rupture and probably fatal internal hemorrhage or other grave termination.

The President, Dr. Braxton Hicks, said his opinion, based on many cases, was that a number recovered from severe internal hemorrhage, while a greater number gave no serious anxiety to the patient or medical attendant. If, then, these cases were not so fatal, he should prefer not to interfere till urgent symptoms arose. But, generally, we do not see the patient or recognize the condition till serious symptoms arise, and then the patient is in such jeopardy that we feel afraid lest, by so serious an operation, we should take away the chance of life, which even then may be reckoned upon; so that practically the opportunity for such an operation as that suggested seldom presented itself. If any one would look over the records of cases in the Society's *Transactions*, he would see the exceeding difficulty which would have attended the removal by gastrotomy—adhesions in all directions, enlargement of the vascular system into sinuses, the hemorrhage resulting from the rupture of which would be excessively difficult to stop.

ART. 226.—*On the Anatomy of the Human Placenta.*

By J. BRAXTON HICKS, M.D., F.R.S.

(The Lancet, May 18.)

At a Meeting of the Obstetrical Society on May 1st, an abstract of a paper by the President, Dr. Braxton Hicks, on the anatomy of the human placenta, was read. The paper began by discussing the foundation of the sinus system, as first propounded by John Hunter. It was shown how the injection he used would almost certainly produce an irruption of blood amongst the villi. The walls of the dilated vessels as they ramify in the decidua serotina on its inner or ovular surface, are so very delicate that the force of the syringe, so unlike the action of nature, is nearly certain to break them down. A description of the arrangement and condition of the vessels formed a subsequent portion of the paper. The evidence of Goodsir and other observers was then reviewed. The second part of the paper proceeded to discuss the fact that blood being found amongst the villi after natural expulsion was no evidence in favor of or against a sinus system, because in the vast majority of placentaë naturally shed there are lacerations and denudations of the decidua serotina, which would admit blood into the so-called cavity of the placenta. The author then argued that the placenta being examined *in situ* without any injury whatever, if no blood be found among the villi, this was conclusive against the existence of a sinus system. Dissection of four specimens was given. In two not a trace of blood was found, in the other there was a trace; in one of these the origin was clearly traced to a small clot extravasated among the villi, in the other to a laceration of the villi themselves. Further evidence was added, derived from three placentaë called "fatty;" in these although the decidual vessels were highly distended with blood, yet the intervillal space was absolutely free. Dissections of ova were given to show that at no time of pregnancy is there a trace of a transition state, which is assumed by some authors. The opening of the uterine glands can be observed to full term, no membrane passing over them on the ovular aspect of the decidua serotina, and the opaque tips of the villi are traceable without any membrane over them to full term. The author quoted also the behavior of hemorrhage, for if the placental cavity were fed necessarily by blood from the mother's vessels, then any rupture into its cavity ought to be attended by severe and continuous loss, which is contrary to fact. A sinus system is proved by extra-uterine foetation not to be a necessity. In the uterus the existence of decidual processes with large sinuses in them brings the blood half way through the placental thickness, and the peristaltic movements of the uterus would doubtless facilitate the exchange of elements.

ART. 227.—*Report of a Case of Sudden Death some time after Delivery.*

By JOHN RINGLAND, M.D.

(British Medical Journal, May 18.)

At a meeting of the Dublin Obstetrical Society, on March 16, Dr. Ringland detailed a case of sudden death seventeen days after delivery, apparently due to embolism of the pulmonary artery. The patient, aged twenty-six, and of a leuco-phlegmatic habit, was seen by him three weeks before her confinement. It was her first pregnancy, and throughout gestation she had apparently been in good health. Her pulse was 100; and at this rate it continued until her confinement on October 1, 1871. She had a very easy labor, without any untoward symptom, but the pulse was 120. The next day the lochia were found to be intolerably offensive. This at once yielded to suitable measures. All went on well until early on the morning of October 18, when she suddenly complained of severe pain in the calf of her left leg, her mouth twitched, frothy saliva was ejected, and in a few minutes she was dead. A post-mortem exam-

ination was made by Dr. Mapother fifty-eight hours afterwards. The lungs, especially the right, were extensively adherent to the costal pleuræ; the upper lobe of the right lung was diseased. The heart was small, soft, and flabby, with much fat deposited externally. The pulmonary artery and its two branches were filled with a large though soft clot. The liver and spleen were congested, softened, and friable. The cavity of the uterus was dilated, so as to contain a closed hand, and its walls were so thin as almost to resemble the urinary bladder. Notwithstanding the excessive thinness of the uterine wall, that viscus had performed its part without yielding. Had operative interference been necessary during labor, rupture of the uterus would probably have taken place. The absence of all symptoms, with the existence of a large amount of visceral disease, was also a remarkable trait in the case; the permanently rapid pulse being the only apparent departure from health. The President referred to the serious position in which a medical man was placed under circumstances similar to those described by Dr. Ringland. He had been struck with the rapid decomposition which the body had undergone, and with the extreme attenuation of the uterine walls. Dr. Playfair had stated that true embolism never occurred before the nineteenth day after delivery. A thrombus might form at an earlier period; and the case reported by Dr. Ringland might have been one of thrombus rather than of embolon, the formation of the clot being favored by a weakened state of the heart. Dr. Churchill gave details of two cases of sudden death after parturition. One lady had made an excellent recovery, and had dressed to go down stairs. She sat down to pass urine, when, with a loud cry, she fell forward dead. This was probably a case of embolism. In a second instance of sudden death, a lady was found by him three hours after her first delivery, with the face livid, the lips purplish, and in a dying state. Death was perhaps due to what he would call *cardiac paralysis*. Dr. H. Kennedy believed that in Dr. Ringland's case fatty heart and not embolism was the immediate cause of death. The fetid character of the lochia, the patient's habit, and the early setting in of decomposition, all pointed to fatty degeneration of the heart, as did also the permanently rapid state of the pulse for some time before death. Chloroform might certainly have proved fatal if used under such circumstances. Dr. Atthill regarded the formation of a coagulum as the immediate cause of death in the case described in the paper. This thrombus, not an embolon, might form in consequence of the weakened state of the circulation dependent upon a fatty heart. He quoted a somewhat similar instance, in which a lady recovered from several syncopal attacks.

(B) CONCERNING THE DISEASES OF WOMEN.

ART. 228.—*Cases of Inter-menstrual or Intermediate Dysmenorrhœa.*¹

By WILLIAM O. PRIESTLY, M.D., Professor of Obstetric Medicine in King's College.

(*The Lancet*, December 9, 1871.)

The author pointed out that, although much had been written concerning dysmenorrhœa, and several forms of it had been described in accordance with the pathological views taken of its causes, the description of the several varieties was ordinarily limited to the time of the catamenial period, with the two or three days additional which may precede and follow the menstrual flow. From time to time, however, cases of a more obscure kind presented themselves, in which the chief suffering is remote from the actual menstrual period, but comes on, nevertheless, with the same punctuality, and is probably dependent on organic changes associated with the production of the catamenia. Probably other practitioners had observed like instances, as they were not unfrequent, but as the author had met with no description of them, he brought the subject

¹ Read at a Meeting of the Royal Medical and Chirurgical Society, November 28.

before the Society as a fragmentary contribution to the pathology of uterine affections, which might possibly evoke further elucidation by discussion.

In all the cases detailed, severe pain was experienced by the patients midway in the menstrual interval. The pain commonly came on about fourteen days after a catamenial period, and, after lasting a variable number of days, ceased before the supervention of the next expected period. In one case, the pain, beginning midway in the interval, ran into the following monthly period, and was relieved by its flow. The suffering was constantly referred to one or other ovarian region, and in three cases out of four marked tumor, or thickening from old adhesions, was found in that locality.

The reason for the occurrence of pain in the inter-menstrual period, and with such regularity, was not, in the present condition of our knowledge, perfectly obvious. A study of the physiological and pathological conditions left little doubt, however, that it was due to perturbations in the function of "spontaneous ovulation" habitually going on in the ovary. Hypertrophy of the structure of the ovary, or thickening of its indusium, would lead to undue vascular excitement, and impede the advance of ova to the surface in their attempts to attain maturity. It was not unreasonable to suppose, from all the known facts of the case, that preparation for an approaching period began in the ovary ten or fourteen days before the occurrence of the monthly uterine discharge; and if the initial steps in the process of ovulation were opposed by certain pathological conditions, pain would ensue. Nay, in the absence of distinct organic change, it might readily be imagined how special irritability in the ovary would cause an unusual amount of disturbance whenever there was occasion for the exercise of fresh activity in the organ. This latter class of cases would partake more or less of a neuralgic character.

The treatment would depend on the pathological condition as ascertained by examination. The pain being only a symptom, it would be needful to inquire into the cause; and if there were tumor, or thickening depending on former inflammation, absorbent remedies would be indicated. If no organic change of structure could be detected, anti-neuralgic remedies, such as quinine, iron, and arsenic, would best answer the purpose of cure.

ART. 229:—On the Essential Cause of Dysmenorrhœa, as illustrated by 'Cases of Menstrual Retention.'

By ROBERT BARNES, M.D., F.R.C.P.

(*Medical Times and Gazette*, April 27.)

The author sought, by comparison of different cases of dysmenorrhœa, to discover a common essential cause. Having discussed the question of "irritable uterus," and adverted to the evidence accumulated since the time of Gooch and Ferguson in proof that cases of neuralgic and constitutional dysmenorrhœa were being gradually transposed under closer clinical analysis to the class of obstructive dysmenorrhœa, the author stated the proposition that the essential condition of a large proportion of cases of dysmenorrhœa was really retention of menstrual fluid. He illustrated this by several cases typical of various kinds of obstruction, and especially by some of congenital or acquired stenosis and atresia of the genital canal. For example, one was that of a healthy woman who never suffered dysmenorrhœa until after a severe labor, which was followed by sloughing of the vagina and gradual atresia by cicatricial contraction; as the constriction advanced dysmenorrhœa became more and more severe, until, the vagina being completely obliterated, the phenomena of complete retention ensued. When the vagina was restored by operation, the dysmenorrhœa was cured. So in cases of imperforate hymen, there was dysmenorrhœa from retention. Some points in the history of this affection were discussed. The term "amenorrhœa," usually applied, was bad; menstruation went on, it was

¹ Read at a Meeting of the Obstetrical Society of London, April 2d.

occult and painful. The sources of danger and the modes of operating were considered. The cases of dysmenorrhœa from flexion and from stenosis of the os internum and os externum uteri were compared with those of complete atresia of the vagina, the common condition being in all retention of menstrual fluid. Other illustrations were adduced to show that retained fluid or clots in utero caused symptoms similar to those of dysmenorrhœa. The effect of stenosis and atresia in producing retrograde or ascending dilatation of the genital canal was shown, and the mechanism by which retained or injected fluids found their way through the tubes was attributed to the contractile efforts of the uterus excited by the pressure of the retained fluids. One condition submitted was that, if the most common essential condition of dysmenorrhœa was retention of menstrual fluid, search must be made for the cause of the retention in order to remove it. This conclusion was as logical as the necessity always recognized of giving exit to the menstrual accumulation in cases of complete retention from imperforate hymen. Dysmenorrhœa was incomplete retention. The indication was the same, only less imperative.

ART. 230.—*Mechanical Dysmenorrhœa and Chronic Endometritis.*

By ALFRED HALL, M.D., Brighton.

(*British Medical Journal*, Dec. 9, 1871.)

In the following case, mechanical dysmenorrhœa and chronic endometritis were cured by dilatation with laminaria-tents and the application of a solution of nitrate of silver to the uterine cavity, the result being remarkable fecundity. The patient was thirty-four years of age, well-formed, and healthy looking. Her case was characterized by a history of long-continued menstrual trouble, dating from the first catamenial epoch—pain in the left hypochondrium, symptoms of spinal irritation, hysteria, and dyspepsia. The menstrual flow usually lasted seven or eight days, but brought no relief to the pain. Marriage in 1867 brought no change; on the contrary, an attack of menorrhagia aggravated her condition. The lips of the os being found excoriated, and the cervix congested, blood was taken by puncture, and nitrate of silver applied, but without much benefit. Finding considerable contraction in the cervical canal and os internum, it was dilated with laminaria-tents, of which two were used, at an interval of ten days; and a solution of nitrate of silver (two scruples to an ounce) was applied twice a week to the interior of the uterus. Marked benefit ensued. The next three catamenial periods passed off without any suffering. Pregnancy then occurred, and she was delivered of a full-grown female child at term; which, however, she could not suckle. After passing two more periods naturally, pregnancy again occurred. She went the full time, and was delivered of another healthy infant. This she was also unable to suckle. For the third time pregnancy ensued at the end of three months from her last labor. She went the full time as before, and on this occasion gave birth to three female children, all well-formed and healthy. She was unable to suckle them. Two died within the month, and the third is now in a state of slow decline. Thus this poor woman gave birth to five full-grown infants in the short period of one year and ten months.

ART. 231.—*Menstrual Pelvi-Peritonitis.*

By THEOPHILUS PARVIN, M.D.

(*American Practitioner*, Dec. 1871.)

Dr. Theophilus Parvin relates two interesting cases of this disease, and adds the following remarks on its diagnosis and therapeutics:—

"The *diagnosis* of menstrual pelvi-peritonitis will depend, in the first place, upon some obvious menstrual disorder. This disorder existing, we determine simply the etiology of the affection, and further investigations will be into the

symptoms of the inflammatory affection in general. *Pain* is the most salient phenomenon of peritonitis. 'This cry of alarm' is in serous membranes highly characteristic.

"A patient with pleuritis describes his sufferings as if a sharp knife were thrust into his side. He hesitates to move, to cough, to take a full inspiration, to do anything which will put the intercostal muscles of the affected side in action. So, too, a woman with pelvi-peritonitis will complain of a pain similarly intense and sharp. Instinct insists not only upon general rest, but also upon local rest, and she lies down on her back, with the limbs drawn up, to relax the abdominal muscles. The pain is in the hypogastric, or in one or both iliac regions, or in all three, and often irradiates over the abdomen, or extends down the inner and upper portion of one or both limbs. Conjoined with pain are tenderness on pressure, and a sensation of fulness or distension in the lower part of the abdomen. Often there is great irritability of the bladder, and micturition is not only frequent, but difficult and painful. Comparatively seldom the rectum is disturbed; though later on in the disease, if the tumor formed should be retro-uterine, it may be very irritable. Nausea and vomiting quite commonly mark the onset of the disease; and as the latter is frequently of 'bilious' matter, and as there may be pain in the right side extending to the liver, and as there is fever, often preceded by a slight chill or chilliness, the disorder is at first sometimes mistaken in malarial regions for an attack of remittent fever.

"The formation of a tumor or tumors in one or more of the vaginal cul-de-sacs is a marked characteristic of this form of inflammation. The tumor may generally be found within a week after the onset of the disease, and before this the sac which is to be invaded by this swelling will be more sensitive to pressure, and less elastic than natural. 'This sensation of a tumor, which is recognized in one or more of the vaginal cul-de-sacs, is so much more interesting to study, as this sign in pelvi-peritonitis is the analogue of the dullness, or rather the analogue of the deficiency of elasticity on percussion which is found in pleurisy, and as the dullness furnishes one of the most important elements of diagnosis. . . . The tumor is in juxtaposition to the uterus, not part of it, and thus is distinguished from enlargements, partial or general, which that organ may have. It is separated from it by a furrow or sulcus, sometimes very distinct, at others slight; and then it is by the difference of level, of consistence, and of elasticity, and by its special configuration, that it is to be distinguished.' (Bernutz.)

"Another point to be observed in making a diagnosis is the appreciation of 'the displacements, versions or flexions, and rotations which the uterus has undergone,' consequent upon the tumor or tumors encroaching upon its normal position, or, further on in the progress of the disease, from inflammatory adhesions.

"Finally, not to prolong the consideration of this topic, an exacerbation of inflammation, a '*recrudescence*,' is no uncommon event in pelvi-peritonitis at the accession of the usual monthly periods, especially if the menstrual flow either fails to appear or is scanty.

"In the therapeutics of this disorder few remedies are required, yet these used intelligently are wonderfully efficient. The first of these I would mention is local depletion by leeches. Where it is possible, the leeches should be applied directly to the neck of the womb; but when the vagina is so swollen or sensitive that a speculum cannot well be introduced, then their application should be made to the lower part of the abdomen, and at least three times as many should be used; for Bernutz justly observes that four leeches to the cervix accomplish more in depleting the inflamed part than a dozen used externally. The leeching may be repeated on the second and on the third day, if there has been no material improvement in the disease. About the third or fourth day a large camphorated blister,¹ occupying at least a third more than the sensitive portion

¹ Smaller blisters upon one or the other iliac regions, as may be indicated, the blistered surface being dressed with morphia, will subsequently be found useful to dissipate the cruel neuralgic pains which in many cases are present after all inflammatory symptoms have subsided. So, too, small blisters similarly applied are useful in hastening the resolution of the tumor when this process seems to be slow or arrested.

of the abdomen, will be found useful if the symptoms are not yielding readily to the previous depletion. Internally, no remedy is so important as opium. Indeed, many cases of pelvi-peritonitis will make good recoveries under it alone. I am in the habit of giving the opium, in combination with quinia and the extract of conium, in the proportions previously mentioned. No one need withhold it for fear of constipating the bowels. This should be desired rather than feared. There are no 'peccant humors' to be purged away, and rest for the whole body, the intestinal canal included, is a most important element in the successful treatment of the disease. Once in four or five days is often enough for an evacuation from the bowels; and when this does not occur spontaneously, a copious injection of warm water, especially when thrown high up in the bowel by means of a long tube, will generally have the desired effect. If any laxative is administered by the mouth, it should be one of the milder salines, and then only as an efficient preparation for the better action of the enema, which should succeed it in three or four hours. At the approach of a monthly period efforts should be made to secure a free discharge. These failing, when the menstrual *molimen* is manifest, two or three leeches to the neck of the womb will be of great advantage.

"Warm hip-baths, after the acute stage of the disease has passed, are often exceedingly agreeable to the patient, and are of some value in lessening the long-lingering soreness in the lower part of the abdomen.

"Of course, too, once this acute stage is passed, the practitioner will give suitable attention to any condition of the womb which may have been the cause of the menstrual disorder. An endo-metritis, a flexion, narrowing of the cervical canal, etc., may require to be cured before the patient can be assured against similar attacks at other monthly periods.

"It is important that the patient should be warned against an early resumption of her ordinary avocations. Better too prolonged rest than too early exercise. Probably no well-marked case of pelvi-peritonitis recovers entirely, under the most favorable circumstances, in less than six weeks or two months. The *abdominal corset*, previously mentioned, or some similar bandage, will be found in many cases of great advantage, enabling patients to sit up and walk without discomfort; when not wearing it their suffering would be acute at every movement or jar. Whether, as Bernutz teaches, his bandage *immobilizes* the uterus, or whether it lifts upward and backward the abdominal viscera, so as to prevent so much pressure upon the recently inflamed pelvic peritoneum, there can be no question as to its great utility.

"It will be observed that in the enumeration of therapeutic agents in this disorder no mention has been made of mercurials. I believe that calomel, or any other mercurial, administered as a cathartic, is decidedly injurious, and that the supposed antiphlogistic action of small doses is unnecessary. Opium is enough."

ART. 232.—*Case of Pelvic Cellulitis followed by Peritonitis.*¹

By JAMES YOUNG, M.D.

(*Edinburgh Medical Journal*, May.)

In the following case some remarkable changes occurred during the progress of, and subsequent to, the primary inflammatory action which ultimately caused the patient's death. "Mrs. —, aged thirty-two, was born in Edinburgh, of healthy parents, who lived to an advanced age. She had had six children and several miscarriages during her married life of fifteen years. Mrs. — was greatly alarmed by fire on the 20th of November last, when ten weeks pregnant. Hemorrhage came on, and continued three weeks, more or less, until the 8th of December, when the fœtus was expelled. A medical man was sent for, and attended for a week, after which a change was recommended to the country. While there, considerable hemorrhage continued for two weeks, requiring tonics

¹ Read at a Meeting of the Obstetrical Society of Edinburgh.

and the liberal administration of wine. Notwithstanding the treatment and rest, the hemorrhage continued until she returned to town, on the 2d of January last. I saw her on the 3d, and found her very weak, pale, and anæmic. I examined the uterus, and thought there were indications of some placental remnant, which was expelled during the night. The hemorrhage ceased on the 5th of January. She had little, if any, pain until the 7th, when she had a severe rigor—pulse 120, and weak, with diarrhœa. She complained of severe pain in the region of the uterus. Some days thereafter, Prof. Simpson visited her, and confirmed my opinion that the case was one of pelvic cellulitis. A blister was applied above Poupart's ligament, on the right side, and occasional mild purgatives were given; also milk, beef-tea, and moderate doses of brandy. On the 12th, the pain was very great, and on examination, I discovered an abscess of considerable size forming between the uterus and rectum. I ordered warm-water injections and sponge-piline fomentations over the pubic region, hoping that the abscess might discharge itself per rectum or per vaginam. On the 15th I opened it with the trocar and canula, and removed a saucerful of putrid and most offensive pus. I ordered vaginal injections to be continued, and on the 16th Mrs. ——— was greatly relieved, which was indicated by her countenance. On the 17th, her reply to my interrogation was, 'Very well.' I prescribed iced champagne, with beef-tea, milk, and white of eggs. To my great dismay she complained of considerable pain over the abdomen on the 19th, and, on examination, I discovered the whole belly to be tympanitic, with tenderness on touch all over. There had been no fresh rigor, which made the extension of the inflammation all the more unaccountable. Turpentine stupes were immediately ordered to be applied at frequent intervals, with small doses of opium, and a due amount of nourishment. Bowels to be gently relieved. On the 20th the pulse rose to 130. Hiccup came on, and vomiting, the stomach showing the signs of irritability usual in such cases; and the patient died on the 21st of January.

"I am indebted to my friend Dr. Charles Bell for a copy of his excellent treatise, entitled, 'Constitution of Women, as illustrated by Abdominal Cellulitis,' and I find, on perusal, that the connection between cellulitis and peritonitis is admirably brought out—see p. 24. Dr. Bell, at p. 26, says: 'It is also a striking characteristic of this disease that it is liable to have sudden and alarming exacerbations, which are attended by an increase of pain and fever, indicating those occasional attacks of peritonitis, which, if not attended to, may prove fatal.' Dr. Bell also, at page 44, refers to occasional attacks of cellulitis coming on after uterine operations, but at that time had only met with two such cases. I have seen several annoying instances where perimetritis followed the use of sponge-tents and pessaries."

Professor Simpson recommended that these abscesses be always opened early, for fear of their rupturing. The difficulty is to determine whether it is a peritonitic or cellulitic abscess.

ART. 233.—*Treatment of Ovaritis.*

By J. MATTHEWS DUNCAN, M.D.

(*Edinburgh Medical Journal*, September, 1871.)

Dr. J. Matthews Duncan divides ovaritis into acute and chronic. The acute form may end simply by resolution, or its termination may be complicated by periöphoric adhesions or abscess, or true ovarian abscess, or it may end in the chronic form of the disease. Chronic ovaritis may last for many years without the organ becoming fixed by adhesions, and without suppuration in its substance or in its immediate neighborhood. One ovary only may be affected, or both sides, and the disease may be limited to one, or attack both alternately. The left ovary, he thinks he has observed, is at least three times its ordinary dimensions. The symptoms cognizable by the practitioner are sensitiveness, tenderness, degrees of hardness, enlargement, roughness of surface, and change of position. Ovaritis is frequently caused by the conditions of recent marriage,

or may be produced by suppression of the menses from cold or other causes; it is often observed as a consequence of gonorrhœa; it occurs frequently during convalescence from abortion. It is less common after delivery at the full time. It is observed frequently after operations on the uterus, such as metro-tomy and other dilatations of the cervix, and it is frequently found in cases where no evident cause can be assigned to it. Ovaritis occasions pain, which may be either slight or severe, acute or dull, in the region of the ovary, groins, back, sacrum, or down the thighs. It is not necessarily accompanied by suppression, or even any diminution, of the lochia or of the catamenial flow, nor by menorrhagia, though these symptoms may occur. Dr. Duncan does not believe that ovaritis is inconsistent with fertility, though it no doubt is a frequent cause of sterility. A woman suffering from ovaritis, acute or chronic, can rarely submit to sexual connection, on account of the pain it inflicts. Patients suffering from ovaritis often quickly assume evident outward appearances of depraved health, the dull eye, the pasty face, pallor, and anæmic look. Ovaritis is only to be made out exactly by a physical examination, the details of which are fully given in Dr. Duncan's paper. The prognosis should always be very guarded; for although many cases mend rapidly, many are very tedious. In the treatment the invaluable condition of rest of the affected organ cannot be maintained, the ovarian congestion attendant upon the maturation and bursting of a Graafian follicle coming to undo all that treatment may have effected. In chronic cases two, three, or four leeches may be applied through a glass speculum to the cervix uteri, and the bleeding from the leech-bites encouraged, if need be, by hot fomentation to the vulva. In some cases it may be preferred to apply a larger number of leeches over the inguinal canal. As in other chronic inflammations, counter-irritation is here often useful. It is best effected by applying the irritant over the inguinal canal adjacent to the affected gland. A small extent of counter-irritation, say about two inches square, is sufficient. It may be produced by a croton-oil liniment or antimonial ointment, or by keeping a blistered surface from healing. Instead of these forms of counter-irritation a seton may be used. The regulation of the bowels is important, and for this purpose the gentle salines are best adapted. Some patients derive advantage from the use of mineral waters, such as those of Kreuznach; others receive benefit from the waters of Homburg or of Kissingen. Iodine, bromine, and mercury may be used with all the care that is exercised in the administration of these remedies; in other chronic inflammations Dr. Duncan does not think the arrestment of leucorrhœa, especially by speculum and caustic, desirable, at least in an early part of the course of a case, and he has little doubt that this kind of treatment is occasionally a cause of ovaritis.

ART. 234.—*Case of Inversion of the Uterus.*

By JOHN THOMPSON M.D.

(*British Medical Journal*, Dec. 16, 1871.)

Dr. John Thompson, of Bideford, relates a very interesting case of this. The subject of it was a farmer's wife who had been previously confined five times. There had been some difficulty in all these labors, either a faulty presentation, or retained placenta, or the birth was premature. In her sixth labor the presentation was natural, she had arrived at full time, and delivery took place in a few hours. After handing the infant to the nurse, Dr. Taylor applied his hand to the abdomen of the mother, but instead of the usual uterine tumor, there was, he says, "a vacuity such as I never before met with. As I had not attempted to withdraw the after-birth, this seemed strange; nevertheless, believing that inversion of the uterus only occurred where traction had been exercised on the funis, it did not strike me that it could have happened here. On examining the vagina, I found the placenta, and at once attempted its removal. In a few seconds it came away with an unusual sort of plunge as if a coagulum had emerged with it, and I tried to remove the mass from under the bedclothes to the ordinary receptacle, but found myself hindered by a band

which appeared stouter than the ordinary membrane, and which was, in fact, the inverted vagina. Lifting the bedclothes, I was astonished to observe the after-birth and womb both escaped together, the latter completely inverted, and having the placenta partially attached. There was no bleeding, nor had much blood come away with the vagina. Promptly taking off my coat, and baring my arm, I first peeled off the placenta—this was done with great facility. No blood flowed from the uterine surface. Then, taking the uterus in my right hand, I passed it up the vagina, and bending my fist pressed nimbly against the fundus (my left hand meanwhile supporting the abdomen) and in an instant restored its position. My right hand passed into the uterine cavity, where I allowed it to remain till contraction came on, and it was only withdrawn when uterine action became decidedly expulsive. The patient, during this time, experienced no shock in her system; she lost but little blood, and subsequently made as good a recovery as she had done in any former confinement. Since that time she has not been pregnant, though she has had good general health, and looks ruddy, vigorous, and cheerful.

"Two practical views derive support from the facts of this case; the first, that inversion may, and sometimes does, take place without interference on the part of the attendant; the second, that reinversion may be readily effected, if the manipulation be prompt and well directed. Formerly, it seemed to be the opinion of the profession that inversion of the uterus always indicated a faulty interference on the part of the practitioner—perhaps the view now generally held is that this is only the most frequent cause." . . . "The ease with which I restored the displacement was the most remarkable feature in the case; it contrasts strikingly with the distressing failures related in the columns of the different medical journals. The reason for this difference seems to be clearly attributable to the fact of my having acted at once. It is noticeable that in nearly every unsuccessful case the accident has occurred for some time before attempts have been made at reduction—in the majority it could not then be remedied. A reason for delay to procure professional assistance is afforded when, as in the instance I have described, the mouth of the uterus contracts over the course of the uterine vessels and prevents hemorrhage, but it is to be remembered that this is the very case likely to give the most resistance to reduction if delay be allowed."

ART. 235.—*On Retroflexion of the Uterus as a Frequent Cause of Abortion.*¹

By J. J. PHILLIPS, M.D.

(*Medical Times and Gazette*, March 2.)

The paper commenced by reference to the subject of retroversion of the gravid uterus so familiar to all obstetrical practitioners, and associated with retention of urine about the third or fourth month of utero-gestation. This complication of pregnancy was well recognized in all the text-books on midwifery, and the influence of this displacement, if persistent, in inducing abortion was noticed by many writers. Dr. Tyler Smith, in a valuable paper on the etiology of retroversion of the gravid womb, had incidentally referred to the great tendency to abortion which existed in such cases. The object of the present paper, however, was to show that in a large number of cases repeated early abortions resulted from a *retroflexed* state of the uterus, and that their true nature was very apt to be overlooked, as they were not necessarily accompanied by any severe or well-marked bladder symptoms. The author had made it a practice to ascertain whether any marked disorder of structure or of position of the uterus could be found to exist in cases of repeated abortions, and the result of this had been such as to convince him that, after making due allowance for various constitutional causes, a most important factor in the production of the abortions in many cases was retroflexion of the uterus; and

¹ Read at a Meeting of the Obstetrical Society of London, February 7th.

that this should occupy a leading position in an enumeration of the local disorders tending to the premature expulsion of the ovum. He excluded from consideration those cases in which, in addition to the displacement, the uterus was bound down by perimetrial adhesions. Various points in the clinical history of these cases were then noticed. Difficult micturition, present in many cases in a greater or less degree, was not a constant symptom. Frequently the uterus was excited to the expulsion of its contents before it had attained such a size as of necessity to interfere mechanically with the passage of the urine. The increased susceptibility of the retroflected pregnant uterus to concussion from sudden movements, the mechanical irritation to which it might be subjected, the straining in micturition and defecation, and the irritation which the abnormal position of the uterus set up, seemed all to be very efficient exciters of uterine action. Further, the interference with the circulation in cases of retroflexion tended to the effusion of blood between the placenta and uterus, and this in its turn excited uterine action, or led to the death of the ovum. Two apparently characteristic cases were then detailed, in which repeated abortions (in one case six successive ones in the third month) had occurred, but in which the recurrence of this accident was prevented in a subsequent pregnancy by simply introducing a Hodge's pessary, and thus maintaining the uterus in a position favorable for its ascent during its growth. The treatment applicable in such cases, both before and after the supervention of pregnancy, was then noticed, and the paper concluded by referring to the influence of retroflexion in causing imperfect deliverance in cases of abortion. Some of the cases which the author had seen of long retention of a portion of the ovum had been cases complicated with retroflexion of the uterus.

ART. 236.—*The Acquired Deformities of the Uterus; their Importance, Effects, and Results. With a Statistical Account of Observations on the Subject at University College Hospital from August, 1865, to December, 1869.*¹

By GRAILY HEWITT, M.D., F.R.C.P.

(*British Medical Journal*, April 20.)

The object of the author was to demonstrate by facts and observations the importance of acquired alteration in the *form* of the uterus, as a disease, and to establish for the *acquired deformities* of the uterus a prominent position in uterine pathology. To establish the frequency of acquired deformity of the uterus, the author brought forward statistics of the whole of the practice in the department for diseases of women at University College Hospital during a period of upwards of four years (1865–1869). These statistics, arranged in tabular form, comprised particulars concerning 1205 patients; of whom 714 were affected with symptoms referable in one way or other to the uterus. Of the 714 patients presenting uterine symptoms, the diagnosis was aided by a physical examination in 624 cases, which were arranged in three classes: First, general, including 65 cases; second, organic, etc., including 182 cases; and third, acquired deformities, or change of position of the uterus, 377. The first class included absence of uterus, etc., 6; amenorrhœa and vicarious menstruation, 9; menorrhagia, 7; periuterine hæmatocele, 11; leucorrhœa, 12; hypertrophy of cervix uteri, 18; climacteric disorder, 2 cases—total 65 cases. The second class included fibroid tumor or polypi, 96; cancer, 54; pelvic cellulitis, 32 cases—total, 182. The third class: flexions, 296 (retroflexions 112, ante-flexions 184); prolapsus, 81—total 377. It was shown that there were very few of those cases presenting uterine symptoms in which the uterus was not affected with a decided change of shape; this change of shape being, in the author's opinion, the underlying and principal element in the cases in question. In the next place the author submitted particulars of each of the 296 flexion

¹ Read at a Meeting of the Royal Medical and Chirurgical Society, March 26th.

cases in tabular form, comprising the age, condition, and main facts relating to the 296 cases. These cases were then analyzed to show the severity of the symptoms and principal effects. The prevalence of *sterility* and the frequency of *abortion* were especially pointed out, and the following results were obtained. Of married there were 235 cases (100 retroflexion, 135 antelexion). Of the 100 retroflexion cases, 21 were sterile, 12 had no pregnancy, 9 had abortions but no child; of the 135 antelexion cases, 60 were sterile, 45 had no pregnancy, 15 had abortions but no child. In reference to the frequency of abortion in the 296 acquired deformity cases, the results were as follows: Of the 100 retroflexion cases (married), 24 had abortions; total number of abortions was 32; greatest number in one case was 3. Of the 135 antelexion cases (married) 27 had abortions; total number of abortions was upwards of 54; and the greatest number in one case was 9. Dysmenorrhœa was almost constantly present in these 296 cases of acquired deformity. Menorrhagia was very common. Chronic uterine inflammation was also common, but was evidently secondary to the alteration in shape. When miscarriages were observed, and retention of portions of the ovum occurred, such retention was very generally traced to the existence of flexion. The *varieties* of acquired uterine deformity were then described as referable to two principal causes—bending of the uterus forwards or backwards. The importance of the varying conditions of the uterine walls in regard to density, consistence, and thickness was next indicated; the connection subsisting between these alterations in shape and the occurrence of prolapsus pointed out. The very important effects on the circulation in the uterus and on the nervous relations and susceptibilities of the organ were also indicated. Together with the paper a series of nearly 100 outline drawings, exhibiting pictorially the diagnosis made at the time of the examination, was laid before the meeting.

Dr. Routh regarded Dr. Hewitt's tables as giving a good idea of the frequency of uterine disease; but he objected to the statement that retroflexion and antelexion were in most cases the cause of dysmenorrhœa. Dr. Hewitt had overlooked the fact that, in unmarried females, the uterus was very commonly antelexed, but recovered its position without trouble. He believed that the number of cases in which dysmenorrhœa was due to antelexion was very small in comparison with those in which it was not so. The author of the paper had not distinguished between congenital and acquired uterine displacement. As a rule, congenital retroflexion or antelexion presented no symptoms, and was only found out by accident; and many of the acquired cases gave no symptoms until the fundus uteri became affected. In Dr. Hewitt's drawings it was the fundus that was shown to be congested or inflamed. Why did some of the women referred to in Dr. Hewitt's statistics become pregnant, and others not? He believed that the reason was, that in some cases of retroflexion the os uteri was turned upwards, so that semen could not enter. This condition was to be remedied by relieving the uterine congestion by antiphlogistic means. He believed that most of the cases of so-called prolapsus were in reality examples of the elongation of the cervix described by Huguier. Dr. Graily Hewitt, in reply, said that he was quite aware that some degree of antelexion was common before menstruation; but displacement was not natural after menstruation in healthy subjects. He had noticed that dysmenorrhœa was very common—in nine out of ten—in cases of flexion of the uterus. His experience had not borne out that of Huguier as to the frequency of elongation of the cervix uteri.

ART. 237.—*On Pelvic Hæmatocele, with Special Reference to its Diagnosis and Treatment.*

By ALFRED MEADOWS, M.D., M.R.C.P., Physician to the Hospital for Women.

(*Obstetrical Transactions*, vol. xiii.)

At a meeting of the Obstetrical Society of London, held June 7th. Dr. Meadows read a paper on the diagnosis and treatment of pelvic hæmatocele.

The author expressed his conviction that this affection, though not common, is not so rare as is generally supposed; nor in many cases is the diagnosis a matter of much difficulty, though in some, and especially in the less severe forms, or when seen long after the attack, the diagnosis is extremely puzzling. Allusion was made to a paper by Dr. Barnes on "Intra-peritoneal Hemorrhage," published in the last number of St. Thomas's Hospital Reports, the author criticizing some of the cases in regard to their diagnosis, and expressing some doubt as to their accuracy in this respect, judged solely by the details given. An examination of these cases in their results, when compared with others of the same kind collected from the works of MM. Bernutz and Goupil, showed a very startling contrast; for, of forty cases of the former, three only died, whereas, in sixty-two cases of the latter, only eighteen recovered. In regard to diagnosis, the author remarked that the difficulties were greatly lessened in cases where the attendant happened to know the exact condition of the parts before the occurrence of the attack; because, as swelling necessarily results from the hemorrhage, its absence before the attack, and its immediate discovery afterwards, together with the attendant symptoms, pointed at once to the nature of the case, inasmuch as no other swelling occurs thus suddenly. The differential diagnosis of uterine displacements; of tumors, either of the uterus or ovaries becoming suddenly impacted in one or other *cul-de-sac*; of pelvic cellulitis; or of pelvi-peritonitis, was dwelt upon at some length, and their distinctive features pointed out. The author recommended the division of the cases into two groups, the first to include all those which originated in the performance of the functions of menstruation or parturition, and the second those of distinctly organic origin, not connected directly with the uterine functions. He advocated more frequent resort to puncture, grounding his recommendation on the fact that, of Bernutz's eighteen cases which recovered, nine were operated upon, seven ruptured spontaneously, and only two were left alone; while, out of twelve fatal cases, two only were tapped, one ruptured spontaneously, and nine were left alone. The author related two cases in which he had tapped successfully, and the paper ended with some directions as to the conditions, mode, and time of operating.

Dr. Barnes said Dr. Meadows doubted his cases, because they were so many; but was his experience so exceptional? Olshausen said that in 1867 Scanzoni had only seen two cases, but that he ought to have seen two hundred. Olshausen himself had seen thirty-four cases of hæmatocele in eleven hundred and forty-five gynecological cases. Seyfert had seen sixty-six cases out of twelve hundred and seventy-two. In fact, it was only necessary to look for these cases with intelligence in order to find them. He had expressly stated in this paper that some of the cases were, no doubt, open to criticism as to diagnosis. In some this had been drawn from the history and general symptoms, and was not established by local exploration.

Dr. Snow Beck said his experience led to the conclusion that retro-uterine hæmatocele was a comparatively rare affection. He did not think that rupture of the gravid uterus, or extra-uterine gestation cysts, or ovarian cysts with large effusion of blood into the peritoneum, ought to be included under this term, which was properly restricted to effusions of blood encysted in the pelvic peritoneum, or extravasated into the loose cellular tissue in the pelvis.

Dr. Graily Hewitt stated that during the last five years he had observed in University College Hospital altogether, he believed, twelve or fifteen cases. They had all recovered, and in no case had puncture been resorted to.

Dr. Tilt remarked that, if the German pathologists had found hæmatocele common, the French writers considered it to be very rare. Since he first drew the attention of British pathologists to hæmatocele in 1853, Dr. Tilt had only met with twelve cases. Pelvi-peritonitis was often mistaken for hæmatocele. The majority of cases required no surgical treatment, but when the collection of blood was considerable, and the tension of the sac very great, he had repeatedly punctured it through the vagina, and allowed the blood to drain away of its own accord, thereby greatly relieving the patient's suffering, and shortening the duration of the disease.

Dr. Greenhalgh agreed with Dr. Meadows that pelvic hæmatocele was by no

means so frequent nor so harmless an affection as Dr. Barnes would lead the profession to believe. On a rough estimate, he (Dr. Greenhalgh) did not think that he had seen more than twenty-five indubitable cases of that affection, notwithstanding he had had extensive opportunities of meeting with such cases.

Mr. Spencer Wells said his personal experience of pelvic hæmatocele was chiefly as a sequel of ovariectomy. He believed the less severe forms, where only small quantities of blood were effused, and afterwards absorbed, were very common. When the tied or canterized pedicle was in the pelvis, a good deal of trouble was sometimes observed at each menstrual period for some months, with all the signs of hæmatocele. In the slighter cases he considered rest and opiates constituted the best treatment. But there were other cases where a high temperature, rapid pulse, loss of flesh, dry tongue and skin, with a painful, distended abdomen, and scanty concentrated urine, showed that the patient was being poisoned by absorption, and here not only puncture, but drainage, was necessary to save life. Puncture alone might only give temporary relief, or do harm by hastening decomposition of blood or pus; but, when a canula or draining-tube maintained a free escape for fluid and gas, cases apparently hopeless did well.

ART. 238.—*Hæmorrhoids in Pregnant and Puerperal Women.*

By FORDYCE BARKER, M.D.

(*American Practitioner*, March, 1872.)

We make the following extract from Professor Barker's excellent paper on the above subject, giving in part his views on treatment:—

"When hæmorrhoids are developed during the later periods of pregnancy, the indications are obviously to counteract the constipation or the diarrhœa, and to stimulate and to restore the tonicity of the hæmorrhoidal veins. The inquiry will then naturally suggest itself, Have we any agent or combination of agents in the materia medica capable of effecting these results? I know of no article which so clearly and positively produces these two results as aloes, and on this I have mainly relied. I am well aware that the general voice of the profession is against the use of aloes where there is any tendency to hæmorrhoids. That 'aloes is contraindicated by hæmorrhoids' is not only the doctrine of the 'Dispensatory of the United States' (Wood and Bache), but it is also the opinion of most writers on materia medica from ancient times down to the present day. 'Fuchsius was of opinion that, of one hundred persons who should take aloes frequently as a laxative, ninety would be attacked with piles. Murray blames physicians who are induced by the gentle and certain action of this medicine to expose their patients to so serious a consequence. It was to this purgative that Fonseca attributed the prevalence of piles among the inhabitants of Padua, and Stahl makes a similar statement in regard to the people of Hamburg. Calvin is cited as a prominent example of this mischief produced by aloes; for this celebrated reformer is said to have died ultimately from the effects of the piles which it gave rise to; but, as he was of frail constitution, subject to quartan ague, gout, and gravel, the part which aloes bore in his demise may reasonably be judged to have been small.' But these opinions have not been accepted by all; Cullen, Sir Benjamin Brodie, Trousseau and Pidoux, and others, have doubted whether aloes is productive of piles, but attribute this infirmity not to the medicine, but to the constipation which aloes is used to remove. I will, however, parenthetically say here, from my own observation, I am convinced that aloes will, under certain conditions of the system, and in certain doses, develop piles. The special property of aloes is 'to excite the muscular contractility of the colon and rectum,' and 'to stimulate the venous system of the abdomen, and especially of the pelvis.' That these are the effects of this agent I have not only the authority of special writers on therapeutics, as Pereira, Wood and Bache, and others, but I believe the general experience of the profession also will confirm the assertion. It would seem, therefore, that the use of aloes for the cure of hæmorrhoids in pregnant women would have

suggested itself from *a priori* reasoning; but I am not aware, from anything that I have read, that it ever has. I suppose that the general impression that aloes is contraindicated where there is any tendency to hæmorrhoids, and that it possesses emmenagogue properties, has had great influence in preventing this. In my own case the use of this article for this purpose was the result of gradually accumulating observation rather than from any reasoning on the subject.

"In the early days of my professional life I was engaged to attend a woman in her confinement who suffered from obstinate constipation. I prescribed for her Dewees's pills. At the time of her confinement she mentioned that in her former pregnancies she had suffered very much from piles, but that my pills had cured them. If I had known of her hæmorrhoidal tendency I should not have given these pills, and I was therefore quite surprised by her statement, as the result seemed so contrary to all that I had been taught. From this time I began to experiment as to the effect of aloes in the treatment of hæmorrhoids, associated with constipation, in the pregnant; and for many years past I have constantly made use of aloes for their cure, whether the hæmorrhoids were the result of constipation or of diarrhœa. I give it, combined with other agents, according to the special indications of each case, and in such doses as I learn, by experience of the peculiar idiosyncrasy of the individual, are necessary to secure one easy, free, daily evacuation of the rectum. Some require a grain morning and evening, while in others a half-grain is sufficient. In anæmic patients I combine the aloes with the sulphate of iron. In the last two weeks of gestation I always combine it with the extract of belladonna. The following is a frequent prescription with me: \mathcal{R} Pulv. aloes Soc., *sapo. cast.*, \mathfrak{ss} \mathfrak{Dj} ; *ext. hyoscyami*, \mathfrak{zss} ; *pulv. ipecacuan.*, *gr. v.* *M. Ft. pil. (argent.) no. 20.* *S.* One morning and evening. When the patient is anæmic I add to the above one scruple ferri sulphat. Some ten days or two weeks before the supposed time of labor I substitute the extract of belladonna, ten grains to one scruple, for the extract of hyoscyamus. When the hæmorrhoids are associated with an irritable rectum, and frequent, small, teasing, thin evacuations, I substitute for the hyoscyamus a small quantity of opium, giving a smaller quantity of the aloes, as in the following formula: \mathcal{R} Pulv. aloes Soc., *ext. opii aq.*, *sapo. cast.*, \mathfrak{ss} *gr. x.* *M. Ft. pil. no. 20.* *S.* One morning and evening. It is unnecessary for me to multiply formulæ, as the general principles by which I am guided will be sufficiently evident from the above.

"In some cases I have not been consulted, and have not known of the hæmorrhoidal tendency of the patient until my attendance during labor. I have seen the hæmorrhoidal tumors sometimes become very large during the labor. Dewees says: 'Much may be done during labor to prevent a severe spell of piles by the accoucher making a firm pressure upon the verge of the anus with the palm of his hand guarded by a diaper, during the progress of the head through the external parts and by carefully returning them after the expulsion of the placenta, as the sphincter is now fatigued, and will not oppose the descent.' I have frequently tried this expedient, but I cannot say that it has been very successful, as the tumors soon come down again, and under these circumstances they are very apt to become strangulated, inflamed, and cause a great deal of suffering. When I find this condition of things, I have within a few years past adopted the plan of forcible dilatation recommended by my friend and colleague Professor Van Buren. My method is this: The patient being fully under the influence of chloroform, I select the moment after the delivery of the child and before the placenta is brought away. I push back the tumors within the sphincter, if I can readily; if not, I leave them alone, and introduce both thumbs back to back, well in the sphincter, and, opening them as wide as possible, I draw them through the sphincter. During this time I have firm pressure made on the uterus by an assistant, and in several instances the operation was followed by the sudden expulsion of the placenta from the vagina. I direct the following ointment to be applied twice daily to the tumors, and well up in the rectum: \mathcal{R} Ung. gallæ *co.*, \mathfrak{zj} ; *ext. opii aq.*, \mathfrak{Dj} ; *sol. ferri persulph.*, \mathfrak{zj} . *M. Ft. ung.* The result has been in every instance that

the tumors have gradually disappeared, and the patients have had very little suffering from the operation.

"When hæmorrhoids come on after labor, the suffering is generally much greater than when it occurs during pregnancy. They are very often induced by the action of the purgative given two or three days after confinement.

"It is now many years since I have been convinced that castor oil was one of the worst agents that could be used as a laxative when there is a tendency to piles, as in many instances I have seen its action develop them. For many years I have annually spoken of this to the medical class before whom I have lectured, and I have received many letters from former students corroborating my statement by their own observation. But I have never seen this alluded to except in one work—viz., 'Hardy and McClintock on Midwifery and Puerperal Diseases'—who incidentally make the following remark: 'We may first observe that castor oil is ill suited for patients who have hæmorrhoids, being very apt to produce in them tenesmus and considerable irritation of the rectum.' I may add the following from Quain: 'Common opinion has assigned to castor oil a character for blandness (probably because of its being an oil) to which it is not entitled. It is an efficient purgative, but, except when given in minute quantities, it usually irritates the rectum.'

"In those who have or are predisposed to have hæmorrhoids, I give the following on the second day after confinement: R Magnesie sulph., magnes. carb., potas. sup. tart., sulphur. sublim., ʒʒ ʒss. Mix thoroughly. S. One, two, or three teaspoonfuls of the powder before eating in the morning.

"This powder produces a soft evacuation, without pain, even when the hæmorrhoids are inflamed."

ART. 239.—*Puerperal Fever.*

By Professor E. MARTIN.

(*Berliner Klinische Wochenschrift*, viii. 32, 1871; *Schmidt's Jahrbücher*, No. 9, 1871.)

Since 1860, when he stated his opinion that puerperal fever was due to a diphtheritic affection of the genitals, Prof. Martin has availed himself of every opportunity of proving the truth of this view. In statistical reports all the febrile affections of the lying-in women are unfortunately often collected under one head. Even thrombosis, which has been so arranged by many, ought not alone to be reckoned in connection with puerperal fever, since in many instances it occurs in quite an isolated form, whilst thrombo-phlebitis at other times really accompanies or follows the diphtheritic process. This diphtheritic process in the genitals of lying-in women is to be regarded as the only essential element of puerperal fever.

The nature of diphtheria in other parts of the organism, especially in the mouth, has, as is well known, been found to consist chiefly in a growth of fungi, the spores of which penetrate into the tissues, and even into the blood, and in this manner set up a general affection. In diphtheria of the genitals, investigation has not yet attained such results. Should we accept the view, however, that this process depends on fungous growths, the question arises whether the fungus causing the affection belongs or not to a distinct species, since we know of many fungi which germinate in the vagina both of the pregnant and barren woman, and do not give rise to any dangerous diseases; or whether the fungus be merely the bearer of the contagium; or, again, whether puerperal fever arises from the introduction of certain fungi and morbid changes of organic tissues and juices, favored by special conditions of the lying-in woman.

According to the above views, one would, in the majority of cases of puerperal fever, find on the external genitals or within the vagina a diphtheritic deposit upon the local lesions, which in the form of fissures of mucous membranes are so often produced during parturition. Sometimes the diphtheritic process is restricted to the external parts, and the affection proceeds to detachment of the morbid deposit, without any or with a very slight general affection. In most

instances. however, the diphtheria is seated not only at the entrance to the vagina, but more internally in the vaginal canal, and on small or large abrasions of the mucous membrane of the os uteri, or of the body of the uterus. especially at the part previously occupied by the placenta. Although the diphtheritic deposit may not have been observed in frequent post-mortem examinations, it should not be forgotten that this in many cases rapidly disappears, and may have been destroyed by injections or cauterization. That it cannot be observed in the uterine cavity during life is obvious; its presence here can be determined only by the discharge of diphtheritic shreds with the returning injections. The process, as a rule, proceeds rapidly from the genitals, and extends to the peritoneum along the connective tissue which surrounds the vagina and the neck of the uterus, or along the mucous membrane of the Fallopian tube, or again by the veins and lymphatics, which modes of extension are often combined.

The pelvic cellular tissue is then seen to be infiltrated with turbid serum as far as the peritoneal covering of the pelvic organs of generation, and the ovaries. In this latter region there is generally found some peritonitic exudation. The infiltration of the connective tissue may extend to the recto-peritoneal space, the kidneys and liver, and sometimes even to the pleura and lungs. This infiltration of the pelvic connective tissue frequently leads after a time to the formation of the abscesses. Prof. Martin has always observed the diphtheria to have been preceded by infiltration of turbid serum. The extension of the diphtheritic process on the mucous membrane of the internal genitals as far as the peritoneum occurs less frequently. On post-mortem examination, one finds that the inner surface of the wound is lined by a sanguineo-purulent deposit; that one or both Fallopian tubes are reddened, distended, chiefly along the outer third, and filled with a purulent mass, and that the fringes at their extremities are covered by a fibro-purulent exudation. This may be observed in the absence of any other perceptible mode of extension. In cases of this kind there has generally been a sudden attack of the peculiar pains of peritonitis about two or three days after delivery. With cases of extension along the lymphatics, these vessels, especially in the uterus, are found filled with a white crumbling or fibrino-purulent mass; after a long duration of the affection, are sometimes observed circumscribed deposits of secretion which might be mistaken for abscesses. Extension along the lymphatics is usually complicated with serous infiltration of the connective tissue—so-called phlegmon. In nearly all of these cases, one or both ovaries will be found infiltrated with turbid serum, and traversed by dilated lymphatics, containing firm white clots or purulent fluid. In instances of this mode of extension, exudation into the abdominal cavity is seldom absent. That the extension of the diphtheritic process in some cases may take place through the vaginal and uterine veins, is especially shown by cases in which, after the throwing off of the diphtheritic deposit from the genitals, a persistence of the disease is to be alone attributed to venous thrombosis and its sequestra. With these various and frequently combined modes of extension of the diphtheritic process from the genitals to other parts of the organism, the disease extends also to the large glandular organs of the abdomen, the kidneys, spleen, and liver, and finally even the lungs are found to be infiltrated with turbid serum, and pleuritis is associated with peritoneal exudation. Less frequently, and in cases of long continuance of the disease, peripheral inflammations of connective tissue occur at various parts of the body, most frequently in the joints, about the muscles of the extremities, and around certain glands. Indeed, the great multiplicity of the local affections and their combinations constitute a characteristic peculiarity of puerperal fever. As we see now one and again another of these affections most prominent, we can understand how different authors have regarded different local affections as being essential to puerperal fever.

Although in reference to the etiology of the disease considerable advances have been recently made, much remains dubious. Though, as often occurs, the remains of the after-birth are retained within the generative organs for weeks and even months without the occurrence of putrid decomposition and the exciting of symptoms of puerperal fever, the retention of fragments of the ovum

will, as is proved by numerous cases, be followed by septic decomposition and puerperal fever. From our knowledge of the influence of ferment bodies suspended in the air on putrefaction, decomposition would have been rather expected in those cases where fragments of placenta protrude from the os uteri and hang down in the vagina, and are accessible on every side to the atmospheric air. There are, however, enough proofs of the occurrence of puerperal fever in spite of complete inclusion of retained fragments of ovum within the cavity of the womb. In such cases as these, some other cause must be sought for. Professor Martin has often observed that women who are suffering from a recent attack of gonorrhœa at the time of parturition are often the subjects of puerperal fever, and that the diphtheritic process is developed immediately and runs a severe course. One must concede, therefore, that these antecedent inflammatory processes in the mucous membrane of the genitals have a certain connection with the origin of the diphtheria. More frequently, without doubt, the invasion of the diphtheria takes place during parturition, rarely during the lying-in; sometimes it occurs even a short time before parturition. Experience teaches that dead material and decomposed organic substances are the predominant sources of danger, especially in those instances in which an examination has been made with fingers previously soiled in handling portions of a dead body. Diphtheria may be also produced by certain secretions from suppurating wounds and ulcers, and also by the products of diphtheritic processes which often take place in typhus, scarlet fever, cholera, open cancer, etc. Most frequently, however, the affection is carried directly from one lying-in woman to another by means of linen, sponges, or the fingers of the medical attendant and midwife. The duration of the incubation period is forty-seven or forty-eight hours, according to Veit.

Diphtheria of the genitals may in exceptional instances attack women who are not lying-in. A case of this kind occurring in his own practice is reported briefly by Professor Martin. According to observations hitherto made, it seems that this kind of diphtheritic process is rarely followed by a deleterious general affection. It is well known that newly-born infants, especially those of lying-in women who have been attacked by puerperal fever, may sometimes be the subjects of similar affections and to these succumb.

The symptoms of the affection are well known. Very characteristic seems to be the high temperature which, except in cases where the disease is locally restricted, always attains and even exceeds forty degrees centigrade. The pulse is very frequent. At first, generally, the constitution is but little disturbed. The prognosis is usually unfavorable; one-third of the cases of genital diphtheria associated with well-marked fever are fatal. With regard to the treatment, prophylaxis demands our whole attention. The most sedulous cleanliness cannot be too forcibly recommended. When diphtheritic processes have made their appearance, the medical attendant should, if it be possible, content himself with only a close external examination. The internal administration of quinine, according to Professor Martin, does not seem to be of much utility. Of late recourse has been had to local means, as vaginal injections of solutions of creosote, carbolic acid, lunar caustic, and of chlorine water. These means have not brought so often as was to be hoped any decided improvement, but yet the temperature may be often considerably reduced and the uterine cavity cleansed.

(C) CONCERNING THE DISEASES OF CHILDREN.

ART. 240.—*On Neuralgia.*

By CHARLES WEST, M.D., F.R.C.P.

("Disorders of the Nervous System," London, 1871.)

Dr. West, after alluding to the frequency with which functional nervous affections are met with in the adult, and their long continuance without the supervention of any organic disease, observes:—

"In infancy and childhood, however, pain referred to any part signifies almost without exception that disease of some sort or other is going on there, or near at hand. The tears so profusely shed do not prove that pain is the lot of the infant more than of the grown person; but at one time cries are the only, as they long continue the most expressive language. Hunger, sleeplessness, fatigue, discomfort of any sort is expressed by cries; while the character of the cry goes far towards helping us to determine the nature of the suffering. But I have never in infancy known any instance of pain—severe, obstinate, recurrent—for which, sooner or later, a distinct local cause was not found; and even in later childhood the rarity of real neuralgia is extreme.

"There are two classes of cases in which it is of especial importance to bear in mind this caution: the one those cases in which pain is referred to the head; the other those in which it is situate in one of the lower limbs. In the former case the pain is almost invariably symptomatic of organic disease of the brain, in the latter with almost equal certainty of hip-joint disease. And yet I have often seen it regarded for many days as purely neuralgic. The mistake is the more likely to be committed when pain is referred to the head, owing to the undoubted rarity of intense pain as a symptom of acute disease of the brain, while the severe suffering which sometimes attends cerebral tubercle is almost always associated with some positive symptom or other of organic mischief. But now and then I have seen cases where, after some previous failure of health, and some trivial head discomfort such as scarcely attracted attention, pain has come on, so sudden, so violent as to throw all other symptoms completely into the background, and so distinctly and almost completely intermittent, for a time, even under the influence of quinine in large doses, as to mislead even the most wary. And yet time has undeceived one as to the nature of the case; the intermissions have become less complete, and of shorter duration; the influence of quinine has passed away; the intervals between the paroxysms of pain have no longer been times of cheerfulness, but of indifference to objects around, till the indifference has deepened into stupor, and suffering has abated just in proportion as consciousness has been lessened.

"It is most difficult to lay down rules for the avoidance of error, for while it is undoubtedly true that neuralgia may follow either on some previous ill-defined febrile attack, or may take place during convalescence from typhoid fever, it is just in such conditions that real disease of the brain oftenest comes on; and the latter is of far more frequent occurrence than the former. It may, however, be of some use to bear in mind that neuralgic pain is localized in some part of the head; that, while it is very intense and accompanied with excessive intolerance of light and sound, it is also often attended with weeping, and the importance of tears as disproving the existence of real inflammatory disease either in the head or chest, first dwelt on by Trousseau, cannot be overrated. The intervals between the paroxysms are times not only of perfect ease but of cheerfulness; sickness is absent, the power of taking food is not lost, and sleep, if not interrupted by pain, is quiet and refreshing. Moreover, there is no dizziness, though there may be heat of head; the pulse is unusually quick and feeble, and, I must add, may be irregular or actually intermittent, for while, as a general rule, irregularity of the pulse is one of the least invariable symptoms of disease of the brain, there are some children with whom any disorder of the nervous system, especially such as is sympathetic with disturbance of the digestive organs, is invariably attended with irregularity of the heart's action.

"Pain dependent on real cerebral disease is rarely limited to one part of the head; or, if it be, is referred to the forehead. It is generally, though not invariably, less intense, the intermissions of suffering are less complete and some one symptom almost always attends the pain: it may be sickness or obstinate constipation, or dislike of light or sound, even when the pain abates—some one symptom, small in itself, but enough to keep alive the anxiety of any one who subscribes to Morgagni's saying, that 'the habit of observation is the foundation of the art of medicine.'"

ART. 241.—*On the Antiphlogistic Treatment of Children.*

(The Medical Record, October 16, 1871.)

At a meeting of the New York Academy of Medicine, on September 21st. a report on diseases of children was read by the Secretary, Dr. Charles A. Leale, who stated, in opening, that as the antiphlogistic treatment of the diseases of women and children had been most generally discussed, he thought it advisable to give a brief account of the subjoined opinions of the various members of the Section on this subject:—

Dr. Chamberlain, in alluding to the antiphlogistic treatment of the diseases of children, remarked that the term was a very old one, dating back to the time of Stahl and Van Helmont, and is understood to mean whatever relates to the treatment and cure of the febrile conditions, and the process and cure of inflammation. He then gave the following theories of inflammation as laid down by Dr. Jacobi: *First.* Inflammation consists in traumatic influence on the bloodvessels, either by direct injury or changed action. *Second.* Disorder of the circulation. *Third.* Exudation of the fluids and formed elements of the blood. *Fourth.* Nutritive disorder in the change and growth of cells. Dr. Peaslee divided the process into stages, as follows: Hyperæmia, or active determination of blood; Congestion, approaching or attaining to capillary stasis; and Exudation, *first*, of liquor sanguinis; *second*, of fibrin; and *third*, of cell growth. These processes are to a certain extent distinct and opposite. Active determination is increased capillary circulation; congestion is retarded capillary circulation, and a rational therapist treated them differently. Venesection may be salutary in the commencement of pneumonia and mischievous after hepatization has taken place. Nitrate of silver applied to a healthy conjunctiva will produce hyperæmia; if applied to a congested conjunctiva, the congestion is relieved. Depressants become phlogistics, and irritants become sedatives, according to the stage in which they are used. He remarked that, according to Jacobi, the proximate cause of fever in children has always to be looked for in the nervous system; hence the importance and value of those therapeutic agents which affect the nervous system either through cutaneous or mucous surfaces, such as heat, cold, opium, veratrum, aconite, camphor, ergot, quinine, etc. He has always recognized cold as an antiphlogistic, but generally used it by cold affusion or sponging, and not by the full cold bath. In the exanthemata, cerebral diseases, intermittent, remittent, and typhoid fevers, when attended with great heat of the skin, sponging with cold water is both grateful and salutary. In pleurisy, pericarditis, or catarrhal fever, he generally preferred warm sponging or the warm bath, to relax the astringent capillaries and restore the suppressed secretions of the skin. The success in attempting to control inflammatory process by cold, will depend upon the situation of the disease, and the assiduity of its application. He would not attempt to control inflammation of the liver, lungs, or kidneys, by cold, but would treat synovitis of the knee-joint by ice-cold applications.

Inunction he spoke of as being a very old remedy, and pretty generally approved by the profession; he generally used fresh lard. The *modus operandi* of this form of treatment was not very apparent to him; the only rational solution seemed to be the protection that it afforded to the cutaneous nerves from the air. Opium he seldom uses in the febrile state of children, except occasionally in the form of Dover's powder. In peritonitis, pleuritis, or pericarditis, where the leading indications were to restrain motion of the serous surfaces upon each other; also in dysentery and muco-enteritis, its use has been followed with the best results. As an anodyne in the fever dependent upon local pain, and as an antispasmodic to the non-striated muscle, no remedy could compare with it. But its use in children is hazardous, and it should be prescribed with great care, not only on account of the idiosyncrasy of children, but on account of the variable toleration of the drug. Veratrum has not produced pleasant or satisfactory results in his hands. Even in small doses it has produced depression and vomiting at times, before its effects could be detected by

the pulse. If it had been combined with hyoscyamus in mucilage, as recommended by Dr. Jacobi, he thought the result might have been different. Tincture of aconite, he considers a valuable cardiac and arterial sedative, also a diaphoretic in the febrile complaints of children; he gives one-half and one drop doses of the official tincture, largely diluted in water, and repeated once in two or three hours. The views of Jacobi upon camphor, quinine, and ergot, that they act as sedatives by their effect upon the vaso-motor nerves has interested him; but the effect of the latter agent he considers as analogous to sulphuric acid, which has quite a reputation as an anti-febrile remedy. He is not aware that it either reduces the power or frequency of the pulse, or lowers the temperature of the body.

Dr. W. C. Roberts gave the explanations of inflammation as offered by Bennett, Andral, Jacobi, and others, and further remarked that as a secondary consequence of inflammation Kaltenbrunner had said that if alcohol be applied to the web of a frog's foot, the blood presently flowed toward the irritated part, causing acceleration of the circulation. If the dose of alcohol is increased, the phenomena of congestion increased considerably, and extended over a larger space; at length points of stagnation appear in the focus of the affected parts, and announce the establishment of inflammation. If the dose of alcohol be still further increased, the points of stagnation become larger and more numerous; the circumferential disturbances of the circulation extend themselves, and at length implicate the whole of the circulating system, and give rise to a fever which is added to the inflammation, the circulation in the opposite foot being as much accelerated as in that operated on, and the general system disturbed.

Dr. A. C. Post stated that he never resorted to venesection in the infant, but when local depletion is demanded he uses leeches, which have been of great service, especially for the relief of the intense pain occurring in acute otitis. He applies the leech to the membrane of the tragus, and has procured by it more favorable results than any other means of treatment. He considers the *antimonii-potassio-tartras* in $\frac{1}{16}$ gr. doses one of the best antiphlogistic remedies we have. In regard to blisters he thinks that they are generally left on too long; would never leave one on a child of two years longer than one hour and a half. His directions are to remove them before any vesication appears—thereby preventing absorption. He does not doubt that a sedative effect is produced by blisters, but believes they have been a much neglected as well as a much abused means of treatment.

Dr. Post stated, in answer to a question of Dr. Roberts, that it is by contiguous sympathy the result is obtained when we excite cutaneous circulation to relieve a remote inflammation, viz., applications to the surface of the scalp relieve the brain, and over the epigastrium the stomach. He thinks that the effect of local blood-letting is in proportion to the means by which we approach the seat of disease, as when we relieve a congested os uteri by scarification. He has often seen patients much benefited by the application of leeches to the *ala nasi* to relieve an over-congested brain; half an ounce thus taken from the Schneiderian membrane will do more good than four ounces taken from the temple. He always applies the leech to the membrane covering the septum, where no visible scar is left, and the hemorrhage can easily be controlled by pressure. He mentioned the case where a physician, in his endeavors to make a high application, lost the leech for some time until it was coughed up and expectorated by the patient.

Dr. Mark Blumenthal thought that a great change had taken place in the treatment of inflammatory diseases of children; that at present there were few physicians residing in cities who resorted, as was formerly done, to either bleeding or blistering. He has used leeches in brain diseases and the like, but now prefers other methods of treatment, except where there is great hyperæmia. During the state of congestion he generally prefers ice-cold applications. In the treatment of croup he prefers either *ipecacuanha* or the sulphate of copper to tartar emetic, only using the latter for its emetic effect. When there is a full pulse and considerable febrile movement, he administers *digitalis*, and sometimes *veratrum viride*. In inflammatory diseases of the brain, throat, and pulmonary organs, good results are produced by mercurials

frequently administered in minute doses. Prefers large sinapisms to blisters, also warm water applied over a large cutaneous surface. He does not use applications of ice to the abdomen during an inflammation, preferring large, hot flax-seed poultices, which he has seen produce remarkable results. With reference to quinine and iron, although he does not consider them, properly speaking, antiphlogistic remedies, yet he often uses them in inflammatory diseases, more especially for their tonic effects, where they are oftentimes of great service by enabling the patients to withstand the disease, and to convalesce more rapidly.

Dr. H. P. Farnham said that he had been much pleased with the effects produced by aconite in the treatment of inflammatory diseases of infancy. As a hypnotic, he has given the hydrate of chloral in one-and-a-half grain doses to children six months old. He stated that although more palatable when given in combination with a syrup, yet it was prone to decomposition, to prevent which he usually added a few drops of chloroform to the mixture.

Dr. Sewall stated that in treating inflammatory diseases of children it was necessary to begin early in guarding against debility. He regarded the treatment by counter irritation as very important. For several years past he had ceased to use the tincture of aconite for young children, on account of the bad effects noticed.

ART. 242.—*On the Acid Dyspepsia of Infants.*

By EUSTACE SMITH, M.D., Physician Extraordinary to H.M. the King of the Belgians, Physician to the North-west London Free Dispensary for Sick Children, etc.

(*American Journal of Obstetrics*, p. 97.)

Acid dyspepsia is one of the commonest digestive derangements met with in young children, and few infants can be said to escape it altogether. A trifling complaint and readily recovered from when attended to early and judiciously treated; if neglected, it becomes a most serious and obstinate disorder, which may resist all treatment, and may lead to the most extreme emaciation, or even to death itself.

The food taken seems shortly after being swallowed to undergo an acid fermentation; sour gases are evolved, great discomfort is produced and nutrition is seriously interfered with. The derangement is usually caused by overfeeding with farinaceous foods. It is too commonly the case that these foods are given in enormous quantities—in quantities greater than any infant with ordinary digestive power can by any possibility assimilate. The reason of this reckless feeding is, partly the mistaken notion which so universally prevails of the digestibility of these foods; partly the eagerness with which the child himself will swallow large masses of sop; for the griping and flatulence occasioned by the presence of large masses of starchy matters in the alimentary canal will—if not too severe—excite fictitious hunger which is not easily appeased. An infant of three or four months old, in whom the secretion of saliva is but lately established, or an infant of a yet earlier age, who has no saliva at all, is often fed with a large tablespoonful of corn flour or other farinaceous powder, boiled with milk or with water, four, five, and even more times in the day. The food lies undigested in the bowels, ferments, and a state of acid indigestion is set up, which does not cease with the removal by vomiting and purging of the cause which has produced it. Even a return to a simpler diet is often insufficient by itself to put an end to the derangement; plain milk and water is vomited sour and curdled, and everything taken into the stomach seems to undergo the same acid change.

As this derangement is so easily excited by improper feeding, even in healthy infants, children whose strength has already been reduced by disease, and whose digestive power is therefore lowered in proportion to the weakness of the whole system, are still more likely to be affected by the same cause. On this account acid dyspepsia is a not infrequent sequel of acute disease in infants, and may,

after apparent convalescence from the primary disorder, lead to death by the interference with nutrition and by the exhaustion which it so often produces. The diarrhoea, which is a not uncommon sequence of some of the acute specific diseases, as scarlatina and measles, is often primarily excited by this derangement, and is too frequently a cause of death. Severe operations upon the child, such as that for stone in the bladder, may also be followed by the same complication, for anything which lowers the easily depressed general strength reduces also the digestive power and predisposes to this complaint.

Children brought up by hand are especially liable to this acid dyspepsia, for even when fed upon a suitable diet, carelessness in the administration of the food selected, so that the stomach is overloaded by too frequent or too copious meals, or neglect of the necessary cleanliness, so that they are allowed to take milk which by being put into a sour bottle has already begun to change, will excite this indigestion. Amongst the poor of London it is not uncommon to find a child brought for medical advice sucking at a feeding-bottle of which the intensely sour smell at once discloses the cause and suggests means for the relief of the complaint under which he is laboring.

The earliest symptoms of this derangement are due to the uneasiness produced by flatulent distension and griping pains. The infant is restless and fretful, whining and crying and refusing to be pacified. Large quantities of gas are evacuated both by the mouth and by the rectum, affording at first some relief, and the child becomes quieter until a reaccumulation takes place. At night the griping is exceedingly distressing, and his sleeplessness at this time, by the discomfort it occasions to his attendants, is usually the symptom which assumes the greatest prominence in the mind of the mother, and is the chief reason for applying for advice. The infant, after lying for a time in uneasy sleep, starting, twitching, moaning, frowning, and drawing up the corners of his mouth, suddenly wakes up with a loud cry, and is seized with a fit of violent screaming which resists all efforts to calm him. He throws himself from side to side, jerks about his lower limbs, or suddenly straightening them out in a line with his body, becomes for a few moments rigid as if turned into stone. These attacks of colic are sometimes so severe as to cause great alarm; the child falling into a state of collapse, or being thrown into convulsions, which may be repeated again and again. The ravenous appetite noticed in children suffering from flatulence has already been referred to. This symptom usually disappears as the derangement becomes more marked. Vomiting comes on after a time, the appetite then fails, and the child is thirsty and feverish. Vomiting is at first excited by taking food, but may afterwards occur when no food has been lately taken, and in bad cases may be caused by a sudden movement, or even by a touch, as in wiping the mouth. The vomited matters consist at first of food and curdled milk, afterwards of clear fluid-like water; the smell is usually intensely sour. The bowels are at first confined, but after a time diarrhoea comes on, the motions being either pale, frothy, and sour-smelling, or watery and fetid. There may be straining during the passage of a stool, in which case the motions may contain streaks of blood. An eruption of red strophulus, covering the body and arms of the child, is a not uncommon symptom; it may be mixed with urticaria.

An infant suffering from this derangement soon becomes pale and thin. His face assumes a constant expression of fretfulness, which is increased by the furrow which appears, passing on each side from the nose, to encircle the corner of the mouth. The lower eyelid and upper lip are disposed to be livid; the lips twitch, and the corners of the mouth are frequently drawn up, giving a peculiarly plaintive and helpless expression to the face. The fontanelle is depressed more or less deeply, according to the degree to which the strength is reduced. The eyes sometimes assume a fixed stare, while the muscles of the face twitch, and the thumbs are drawn inwards upon the palms of the hands. These nervous symptoms—well known to nurses by the name of inward fits—are of importance, as being sometimes the forerunners of convulsions. The tongue is at first covered with white fur, through which red papillæ project; afterwards it is apt to become pale and clean, or with little patches of fur scattered here and there over the dorsum. In bad cases the whole body has an

offensively sour smell. This smell proceeds not only from the breath, but from acidity of all the secretions; the saliva, the perspiration, and the urine being all intensely acid. The cutaneous secretion is, however, seldom in excess; more usually the skin is dry, and is in consequence harsh and rough to the feel, especially at the backs of the arms and the belly. The feet are generally cold, and the child lies with the knees drawn up to the abdomen. The coldness of the feet is no doubt one cause of the griping pains which are so constant in this derangement, for even in healthy infants abdominal pains are frequently excited by coldness of the feet, and cease when these are warmed. During the earlier periods of this disorder the complexion turns slightly yellow from time to time, the yellow tint remaining for some hours or days. Occasionally the skin becomes completely jaundiced. After the complaint has existed for some time a peculiar earthy tint is noticed of the face and whole body, which is very characteristic of chronic derangement.

If the disorder is primary, and is not soon arrested, a chronic catarrh of the stomach is often set up, the bowels becoming obstinately confined, and the vomiting continuing as a persistent condition. In other cases, again, the derangement may settle principally upon the bowels, leading to a chronic diarrhoea. The most extreme emaciation is often reached through these means, and it may be only after weeks, or even months, of illness that a termination by recovery or by death is arrived at.

When the disorder is secondary to some acute disease, or follows a serious operation, the strength is usually so much reduced by the original illness that the child, weakened more and more by the vomiting and diarrhoea, and by his inability to digest any nourishment whatever, soon becomes exhausted. Thrush appears upon the inside of the mouth and the child sinks and dies. Pneumonia is a not uncommon complication in the latter stages of the disease, and if the strength be much reduced, may exist without manifesting its presence by any of the usual symptoms. There is no cough, and the heat of the body is not appreciably heightened, or, if heightened at first, the elevation of temperature soon passes off. This pneumonia usually attacks the bases of both lungs.

The earlier treatment is commenced in this derangement the more readily will the complaint be arrested, for as the strength becomes more and more reduced, and the stomach and bowels become more and more disordered, treatment, which in an early stage would be at once attended by improvement, loses much of its efficacy, and great difficulty is experienced in making any impression upon the disease.

When the case is seen early, and the symptoms complained of are merely griping flatulence, with ravenous appetite, unaccompanied by sickness or diarrhoea, careful inquiry should at once be made into the diet and general management of the infant. It should be explained to the parents that the appetite will best be satisfied, not by increasing the quantity of the farinaceous matter and the frequency of the meals, but by carefully adapting the food supplied, both in quality and quantity, to the digestive power of the child, so that the nourishment given may be only such as the stomach is able to digest. This may seem a simple and self-evident proposition, but it is one which is constantly forgotten. That a child will be nourished in exact proportion to the amount of food he swallows, and that the more solid the food the greater its nutritive power, are two articles of faith so firmly settled in the minds of many mothers that it is very difficult indeed to persuade them to the contrary. To them wasting in an infant merely suggests a larger supply of more solid food—every cry means hunger, and must be quieted by an additional meal. It is difficult to lay down precise rules for diet in every case of this derangement. This is a matter which can be properly learned only by experience. There are, however, certain plain rules which should always be observed. Of these one of the most important is, that farinaceous food is unsuitable to an infant under the age of three months. Before that age he should be restricted entirely to the breast, supposing that the secretion of milk be of proper quality and be supplied in sufficient quantity. In cases, however, where additional food has to be given on account of the insufficient supply of breast-milk, recourse must be had to

cow's milk, or the milk of the ass. If cow's milk be used, it should be diluted with a third part of lime-water, in order to prevent the too firm coagulation of its casein. Even, however, when thus diluted and alkalized, the cow's milk is sometimes undigested by young infants, who seem to thrive better upon the milk prepared with a very small quantity of arrowroot or baked flour. This scarcely accords with the statement made above, of the unsuitableness of such foods to young infants; but an explanation of the seeming contradiction is found in considering the action of the farinaceous food under such conditions. The arrowroot itself probably contributes little, if anything, to the nutrition of the body, but when thus intimately mixed with cow's milk it has a mechanical action in separating the casein into minute portions. The curd, therefore, coagulates, not in one large clot, but in a multitude of small clots, which are more readily attacked by the digestive juices. It is, however, as has already been said, always a risk to give farinaceous food to young infants, and the same object may be as readily effected, and without any danger to the child, by adding a small quantity of isinglass or common gelatine to the diluted milk in the proportion of one teaspoonful to four ounces.

In older children, brought up upon artificial food, the above symptoms are often complained of, even although the quality of the food with which they are supplied leaves nothing to be desired. In these cases it is the quantity which is the fault: the child is supplied with food largely in excess of his wants or his powers of digestion, and the stomach and bowels revolt against the burden imposed upon them. For an infant of six months old, one, or for a very robust child two teaspoonfuls of farinaceous food, carefully prepared with milk, and given twice in the day, are as much starchy matter as he is able readily to digest. His other meals should be composed of milk and lime-water, or the milk and water with isinglass, as directed above.

The kind of farinaceous food is of some importance. Different foods vary very much in the proportion of their several constituents, and the albumen, gluten, salts, etc., they contain are to be considered quite as much as the starchy matter. The very best food is, perhaps, pure wheaten flour slowly baked in an oven till it crumbles into a light grayish powder. This, prepared with milk, and sweetened with milk-sugar, forms an admirable morning and evening meal. It may be varied occasionally with other farinaceous articles, but whatever be the food selected, the quantity mentioned must not be exceeded. An alteration in the diet, in accordance with the above rules, a small dose of castor oil, or rhubarb and soda, to clear out undigested matter from the bowels, and the administration of a little bicarbonate of soda or potash, with an aromatic to neutralize any remaining acidity and promote digestion, are all the measures that are required at this stage.

If the derangement have gone on to vomiting and purging, with an intensely sour smell from the breath and from the ejected matters, other means must be resorted to. In this case the stomach and bowels are filled with the acid products of fermentation, and the vomiting and diarrhoea are merely the forcible efforts of the alimentary canal to expel its irritating contents. Sedatives to the stomach and astringents to the bowels are here out of place; we shall best cure the derangement by assisting the expulsion, and not by obstructing the exit of the fermenting food. In determining, however, the exact measures to be adopted, the state of the child's strength is an important consideration, and this is best estimated, not by the condition of the pulse, but by the degree of depression of the fontanelle. If the fontanelle is not much hollowed, a teaspoonful of ipecacuanha wine should be at once administered, and should be repeated every ten minutes until vomiting be produced. The acrid matters in the stomach having been thus evacuated, half a teaspoonful of castor oil should be given after a short interval, to act gently on the bowels, and the child should be allowed nothing but a little cold thin barley water, given occasionally with a teaspoon. At the same time the belly should be kept covered with a hot linseed meal or bran poultice, and the child, warmly wrapped up, should be kept perfectly quiet in his little cot.

If the derangement have only existed a short time, the above measures will be usually successful in checking the symptoms, and the child will be found to

retain the breast-milk, or the milk and water with which he is supplied in small quantities. Any tendency to acid fermentation that may remain should be neutralized by five-grain doses of bicarbonate of soda, given three or four times a day, and the patient may be allowed to return very gradually to his ordinary diet.

When, however, the derangement is of long duration, or is secondary to a severe operation or to some acute disease, the symptoms are not so easily overcome. Here the weakness, as shown by the depressed fontanelle, will not allow very active measures to be employed, and therefore the accomplishment of our twofold object—viz., of removing already formed acid from the system, and of preventing further fermentation—requires the most careful management. Emetics are here out of the question, for the strength will not bear further reduction, and the administration of such a remedy would be attended by the greatest danger. Our first care should be to endeavor to restore the circulation to the extremities, by placing the feet as high as the knees in hot mustard and water. If the weakness be very great, the whole body may be immersed in a mustard bath as high as the neck. It is of extreme importance in such cases to restore the proper action of the skin, for it is by this means chiefly that we hope to effect the escape of acid from the system. On being removed from the bath the infant should be carefully dried: a hot linseed-meal poultice is then to be applied to the belly, and the child, well wrapped in flannel, must be returned to his cot. The warmth of the surface must be kept up by hot bottles placed by his sides, and the feet and legs should be well rubbed at intervals with the hand alone, or with a liniment composed of equal parts of compound soap liniment and the compound liniment of camphor. If the child can bear the motion, frictions with the same embrocation may be used to the whole body; but in cases where the weakness is extreme and the vomiting obstinate, violent retching may be excited by the slightest movement, so that the frictions would have to be discontinued. In such cases the feet and legs should be wrapped in hot flannels on which some flour or mustard has been sprinkled, and the most perfect quiet should be enforced. A napkin must be placed under the chin, to receive all matters ejected from the stomach, and when moistened the cloth must be immediately removed and a clean one applied in its place.

If diarrhoea exist, astringents are not to be employed so long as a sour smell from the breath and evacuations indicates the continuance of fermentation in the stomach and bowels. For a child of a year old, twenty drops of castor oil can be administered, and will be usually kept down. After its action a simple chalk mixture may be given or a draught containing five grains of bicarbonate of soda, with three grains of nitrate of potash, in some aromatic water, three or four times in the day. Half a drop of tincture of capsicum is a valuable addition to each dose of this mixture.

If there is constipation, the bowels must be opened by an enema containing castor oil, and be kept in regular action by the occasional administration, as required, of one or two drops of a solution of podophyllin in alcohol (a grain to the drachm), or by suppositories of castile soap placed in the rectum.

The form of nourishment to be given in these cases is of the utmost importance. All matters capable of undergoing fermentation must of course be excluded. Even milk itself, however diluted and alkalized, can seldom be borne, as it is usually vomited sour and curdled immediately after being taken. Women's milk is usually well digested, but not always. In some cases it seems to agree as the milk of the cow; in others, where the irritability of the stomach is very great, the mere movement of the mouth in the act of sucking may be sufficient to excite a return of the vomiting. If this be found to occur, the breast-milk should be given with a teaspoon. In cases where a return to the breast is impracticable, or is not followed by the expected improvement, a good food is whey, made fresh as required by adding prepared rennet to cow's milk in the proportion of a teaspoonful to the pint. To two tablespoonfuls of the whey add one tablespoonful of fresh cream, and dilute with two tablespoonfuls of hot water. Of this food small quantities can be given at regular intervals, and care must be taken that it be either hot or cold, but not tepid, as liquid food given in a lukewarm state would be apt to favor a return of the vomiting.

Liebig's food for infants, carefully prepared with freely diluted cow's milk, will often be borne; but in very bad cases it is inferior to the diet just described. In addition, the waning powers of life must be supported by five-drop doses of pale brandy, given in a teaspoonful of the food every hour, or even oftener, according to the condition of the fontanelle.

By such measures success is often attained even in the very worst cases of this derangement. The obstinate vomiting is best arrested, not by sedatives, but by giving the stomach as much rest as is consistent with supporting nutrition. Of all special drugs, calomel in doses of one-eighth or one-sixth grain, laid dry on the infant's tongue is perhaps the one which is the most generally successful; but our chief reliance should be placed on a careful diet, and on stimulating and hot applications, so as to promote the circulation and encourage the free action of the skin. The existence of cold feet alone would be a sufficient obstacle to the success of any treatment whatever.

ART. 248.—Treatment of Diarrhœa in Infants.

By K. WEISER, M.D.

(*Wien. Med. Wochenschrift*, No. 35, 1871.)

Dr. Weiser objects to the usual modes of treating diarrhœa in children by means of stringent mixtures, warm poultices on the belly, and injections of mucilaginous fluids; instead, he prefers to envelop the child in a moist cloth, with a warm covering around this; when free perspiration has been induced the skin is rubbed with a moist cloth. He gives a little coffee and milk with a small quantity of carbonate of soda several times daily. If the temperature of the body has been reduced by these means, cold cloths, changed every five or ten minutes for some time, are applied, and he prescribes five drops of the solution of acidulated sulphate of iron four times a day.

ART. 244.—Treatment of Chronic Diarrhœa in Children.

By J. F. MEIGS, M.D., Physician to the Pennsylvania Hospital, and
WILLIAM PEPPER, M.D., Physician to the Philadelphia Hospital.

("Treatise on Diseases of Children," 4th edition, 1870.)

The following extract shows the manner in which the modes of treatment are indicated:—

"It should never be forgotten in the treatment of chronic diarrhœa in children, that the most important point of all is the regulation of the diet and other hygienic conditions. We are fully convinced that we have seen several children saved from death by attention to these points, and by the persevering and careful employment of tonics and stimulants. It often happens, after the disease has lasted for some weeks or months, that the powers of the stomach are almost wholly lost. The child either refuses food or takes so little that the quantity is evidently insufficient to carry on the vital processes, or the greater part of what is taken is rejected by vomiting, or lastly, much of it passes off through the bowels, and appears in the stools in an undigested state, forming what is called lientery. If this condition of things is allowed to continue, the emaciation and exhaustion make rapid progress, and the case must soon terminate fatally. Under these circumstances all the ingenuity and skill of the physician are required to find articles of diet of a kind to recall and tempt the child's worn-out and often perverted appetite, and which, at the same time, may be digestible and nutritious, and tend to restore vigor to the digestive function. If the stomach is frequently sick, it is best to abandon all remedies but those which are stimulating and strengthening, and especially forbid all such as are in the smallest degree nauseous. We would indeed depend entirely on the use of repeated doses of the oldest and most delicate brandy that could be found, of which from one to two teaspoonfuls may be put into a wineglassful

of cold water, and the whole given by teaspoonfuls in the twenty-four hours: or fifteen to twenty drop doses of the elixir of Peruvian bark every three or four hours may be used; or Hawley's wine of pepsine, in half teaspoonful doses three times a day; or, two or three drops of tincture of nux vomica in sweetened water three times a day, if the bitterness does not cause nausea or increase the loathing. In such cases, wine of iron, in doses of twenty drops to a fourth of a drachm, with syrup of tolu and caraway water, will sometimes do exceedingly well; or the following, which has sometimes succeeded in our hands: R Tr. ferri. chlorid., ℥j; acid. acet. dil., ℥j; liq. ammon. acetat., ℥ij; syrup. simp., ℥ss; aquæ. ℥ij; M. Dose at four years, a teaspoonful, and under that age, half a teaspoonful three or four times a day.

"In some very obstinate cases, especially where there is any reason to suspect the existence of a malarial element in the case, from half a minim to one minim of Fowler's solution of arsenic, with the wine of iron, three times a day, has been very serviceable. While this is being done, an occasional dose of anodyne, just enough to tranquilize without stupefying may be given. If the rectum will retain it, it is better to give it by enema. In some cases we have found the aromatic syrup of galls, given with brandy, to be taken by the child without any difficulty or disgust.

"Exercise by riding and exposure to the air, which, however, must never be carried so far as to induce positive fatigue, are all-important. In some very severe and tedious cases, change of residence or travelling has been known to effect a cure after all remedies and other means had failed."

ART. 245.—*On Uratic Infarctions of the Kidneys in Infancy.*¹

By M. PARROT.

(*Gazette Hebdomadaire*, No. 47, 1871.)

M. Parrot, in November, 1871, presented to the Society the kidneys of a newly-born infant, in which he showed uratic infarctions.

This lesion, frequent in infants, is characterized on section of the kidney by a series of tufts of an ochre-yellow color, which correspond to the arrangement of the tubes of Bellini in the medullary substance. Between the yellow rays are found red lines, which are more numerous and larger toward the base of each pyramid than at the apex. The yellow streaks are sometimes scanty; at other times they are so pressed together that the whole pyramid acquires an uniform yellow color. By compressing the papillæ one may squeeze out some thick fluid resembling water mixed with some yellow pollen. This yellow material is found sometimes deposited along the whole track of the urinary mucous membrane from the kidney to the extremity of the prepuce.

The microscope shows that the tubes of Bellini are more or less obstructed by this yellow material. Sometimes the tubes, more distended at some parts than at others, are varicose, and the epithelial lining can no longer be made out. This material, however, occupies only the interior of the tubes, and never penetrates the epithelial cells, but merely makes them. When isolated this material, observed under moderate powers, presents itself under the form of cylindrical stalactites with rounded extremities. These stalactites may be decomposed into a mass of sporules unequal in size, but regular in shape, opaque, black at the centre, brown at the periphery, and striated from the centre to the periphery by well-distinct rays. The surfaces are notched. After crushing these spheres between two glasses, they may be seen to be composed of amorphous and opaque granules.

There have been various opinions as to the nature of these bodies. Virchow thinks that they are formed of lithate of ammonia; he does not, however, seem to have made any chemical analysis. M. Milne Edwards agrees in the view taken by Virchow. Dr. West regards them as deposits of lithic acid, or rather

¹ Communicated to the Société Médicale des Hôpitaux, Paris.

lithate of ammonia. M. Parrot states that they are composed of lithate of soda : the reaction with sulphuric acid, which would give rise to the formation of lithic acid crystals, would prove this.

M. Parrot's opinion is the correct one. One cannot admit that the deposit consists of lithate of ammonia, as this substance is found only in alkaline urine. Lithate of soda, on the other hand, may be found in acid urine, and may be arranged with the aspect of spheres. The urine of infants in whom this lesion may be found is always acid, through the excess of lithic and hippuric acids—Virchow himself allows this fact.

M. Parrot insists upon the conditions under which the concretions are produced. Virchow, and after him Cornil and Vogel, consider them of physiological origin. Virchow bases his opinion on a small number of facts. The argument by which he seeks to establish that uric infarctions constitute a normal product occurring between the twelfth and the nineteenth days of life, seems at first sight to be irrefutable, and yet it is based only on hypothesis. According to these views, external influences and the new life of the infant determine forty-eight hours after death such chemical changes in the tissues that an abundant excretion of lithate of ammonia ensues. The excess of this salt in the urine would be the cause of its precipitation in the renal tubuli. Virchow did not think of comparative physiology as a support of his views, else he would have sought this lesion in the kidneys of well-developed young animals killed a short time after their birth. Had he done so, he would have found a plain contradiction, before which all explanation, however ingenious, would have been obliged to yield. In fact, M. Parrot has assured himself in a great number of instances that uratic infarctions are not to be found in the tubes of Bellini of the kidneys of young mammals or of young birds in a state of perfect health.

Moreover, in his theory Virchow has taken no account of certain contradictory facts which he had met with ; and, indeed, he does not seem to have had in his mind the pathological conditions which had led to death. It is probable, however, that the majority of the infants whom he had examined had succumbed to the most common of infantile affections—that is to say, to disorders of digestion.

But these disorders induce a profound perturbation in nutrition, and consequently numerous and varied visceral changes. Under these circumstances, the infants secrete much fluid, are badly nourished, do not grow, and destroy their own substance : they become autophagic. The completely transformed proteinic elements accumulate in the blood, and there is a tendency to their elimination by the kidneys. There an insufficient quantity of water is met with for washing them away, and then they are deposited in the straight tubule of the kidney.

This explanation differs slightly from that given by Virchow, but M. Parrot, whilst he attributes to the process a pathological cause, relies upon a considerable number of observations, in which he had noted pathological conditions leading to death, and so shows that it has an exclusively morbid origin.

Virchow, denominated by his theoretical ideas, says that the above described deposit is not to be met with before the twelfth day or after the nineteenth day, and he considers its presence a sign of great utility in legal medicine. According to this pathologist, the existence of these infarctions in a newly-born child, even if cadaveric decomposition have rendered uncertain the indications derived from examination of the lungs, will enable one to determine with precision whether the infant was living or dead during the period reaching from the twelfth to the nineteenth day after birth.

This theory is contradicted by facts. On the one hand, Virchow acknowledges to have met with the deposit in the fœtus ; and on the other hand, states that he had seen a very abundant deposit in the canaliculi of a syphilitic infant who died on the twenty-ninth day. Finally, M. Parrot asserts that he has frequently met with this lesion in infants aged one month, thirty-four days, thirty-nine days, and in one instance in a little girl who died from variola in the fifth month of her age.

One sees, then, from M. Parrot's researches, how weak is the theory of the Berlin Professor, and how false are the deductions which he has made from it.

To resume: abundant deposits of lithate of soda are frequently met with in the tubes of the renal pyramids in children who have succumbed to diseases of the digestive canal, with considerable loss of fluids and autophagia.

This lesion is always secondary, and demands no direct treatment.

ART. 246.—On the Treatment of Empyema in Children.¹

By W. S. PLAYFAIR, M.D., F.R.C.P.

(*The Lancet*, January 27.)

The author described the peculiarities of pleurisy in children as contradistinguished from the same disease in the adult. He then referred to the change of opinion which had of late years been observed with regard to the operation of paracentesis. This operation in ordinary serous pleurisy evidently stood on a very different footing from the same operation in empyema. In the former we only sought to relieve the distension by removing some of the fluid and allowing the remainder to be more readily absorbed, while in the latter the chance of absorption was diminished to a minimum; and it would be a great gain if we could effect continuous drainage of the pleural cavity, and at the same time effectually exclude the entrance of air. The author then described the method of drainage by Chassaignac's tube, with illustrative cases. He then described the method of cutaneous subaqueous drainage advocated by himself, and related the history of three cases successfully treated by it. The results of these was very satisfactory, and contrasted remarkably with the cases treated by pneumatic aspiration by Bouchut. The paper was illustrated by drawings of the chests of five children, taken by Dr. Gee's cystometer, which showed how much greater the chest deformity was when air had been allowed freely to enter the pleural cavity.

Dr. Hilton Fagge felt bound to mention to the Society that he had recently had a case in which the same method had been employed, and with results not entirely so satisfactory. The pus had, in this instance, made its way by the side of the India-rubber tube, and continued to discharge. It was of great importance that the tube should be tightly grasped by the skin, and for this reason it was better to remove the canula before introducing the India-rubber tube, which should be of the same diameter.

ART. 247.—On the Treatment and the Origin of Purulent Ophthalmia in New-born Children.

By R. LIEBREICH, Ophthalmic Surgeon and Lecturer to St. Thomas's Hospital.

(*Medical Times and Gazette*, December 13, 1871.)

The treatment consists, first, in careful cleansing; secondly, in the local application of cold; and, thirdly, in cauterizations with mitigated nitrate of silver (one part of nitrate of silver and two parts of nitrate of potassium fused together.) As regards the cleansing, it is above all necessary to explain to the attendants the importance of it, for, ordinarily, the fear of injuring the child prevents them from properly opening its eyes in order to remove the secretion. ~~Mr.~~ Liebreich does not recommend syringes, so generally used, for cleansing—first, because they are dangerous to the attendants, who, in using them, may easily have some of the contagious matter spattered into their eyes; secondly, because by this method the secretion is not completely removed, even after

¹ Read at a Meeting of the Obstetrical Society of London, January 8.

pouring much water over the child. A fine sponge or small pieces of moistened linen rag are preferable for effectually cleansing the conjunctiva.

The application of cold, if made in a careful and suitable manner, is of great assistance in the treatment. In the mildest form of the disease this application alone may even effect a cure in a few days. It is then only necessary to apply, for several hours a day, small linen rags, moistened by being dipped in cold water, changing them constantly. In the more serious cases, on the contrary, when there is much swelling, redness, and heat in the eyelids, and a copious discharge of thick yellow purulent secretion, it is necessary to apply, day and night, without intermission, small rags, previously placed upon ice, and to renew them continually. Later, when the elevated temperature begins to fall, the applications may be discontinued during the night, and gradually reduced, according to the course of the disease. In order to prevent the child from taking cold, it is necessary that the rags should be of a size merely to cover the eyelids without touching the bridge of the nose, and not to make them too wet.

The real curative treatment, cauterization, should only be done with mitigated nitrate of silver. The eyelids must be reversed one after the other, and, after being carefully cleansed, touched with the caustic, which must be passed over all the swollen and red part of the mucous membrane. Before replacing the eyelids in their natural position, it is necessary to neutralize the free nitrate of silver by a drop of salt water. For the first few days only of the disease we may restrict the treatment to the application of cold, and then commence the cauterizations; repeat them once a day, never more frequently, and, after an evident reduction of the disease, once every two or three days. It is important not to repeat the cauterization until the scar of the previous one has disappeared.

To drop weak solutions of nitrate of silver into the eye is not advisable, even in the mildest forms, for the graver forms it is completely insufficient. Cauterization with pure nitrate of silver ought never to be used, neither in this nor in any other disease of the conjunctiva, as it is impossible to limit its effects. The slightest touch with pure nitrate of silver, in fact, produces a strong cauterization, not only not limited to the surface of the mucous membrane, but attacking the subjacent connective tissue. The cicatrization which is the result of such cauterizations produces a permanent irritation of the eye, which cannot be removed by any possible means. None of the other known caustics can replace the mitigated nitrate of silver in the treatment of purulent ophthalmia.

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APPENDIX.

ART. 1.—*On the Possibility of Diagnosing Syphilis by Means of Microscopical Examination of the Blood.*

By Dr. LOSTORFER.

(*Medizinische Jahrbücher*, 1 Heft, 1871.)

"The great mistrust with which, in almost all quarters, retailed observations on certain appearances in the blood in infectious diseases are received, induces me to commence this time with the results of my work hitherto obtained, and a statement of the manner in which I have shown that I can distinguish the blood of a syphilitic from the blood of a non-syphilitic individual.

"Prof. Stricker, who was kind enough to put my assertion to the proof, gave to me on several occasions a number of prepared blood tests, concerning the origin of which I was ignorant, some of these having been taken from healthy and others from syphilitic persons. They had been numbered and noted in writing. After three, four, and at the most six days, I made him acquainted with the results of my examination; and then a comparison with the notes showed that—except in those instances where one or more preparations, either immediately after they were made, or in the course of the examination, had been found useless, and so placed on one side—there was accordance between these notes and my results. Those tests which had been taken from healthy men I indicated as the blood of non-syphilitics, and those from syphilitic patients as the blood of such individuals.

"In a similar manner I have successfully carried out with success a test put by Prof. Hebra.

"The manner in which I have carried out my investigation is as follows: A drop of blood obtained by a puncture in the skin is transferred as rapidly as possible to a smooth slide, and covered by a thin protector. The blood test thus obtained is now placed in a bell-glass, arranged as a moist chamber, in which there is a stand for twelve preparations. In every glass of this kind I place the blood-tests both of syphilitic and non-syphilitic individuals.

"The examination of these preparations is made daily with a N. 10, oc. 3, Hartnack's immersion lens.

"Whilst in general, during the first two days, nothing of a foreign nature was to be seen beyond some vibriones, bacteria, and sometimes the early forms of sarcena, on the third, many times on the fourth or fifth day, and exceptionally after the first twenty-four hours, I found small bright bodies, some of which were at rest and others presented vibratile movements. On some of these bodies a small process could be made out.

"On the fourth, exceptionally on the third, fifth or sixth day, these bodies had become larger and increased in number. Many of the enlarged bodies presented the above-described process, which proved itself clearly to be due to a process of budding. In some, this had increased so much in size that it was almost as large as the maternal body.

"On the following days, the bodies increased more and more in size, so that some soon reached or even exceeded the size of shrivelled red blood-corpuscles. At the same time, however, smaller corpuscles were present in all gradations of size. Bud-formation also was now a frequently observed phenomenon, and many corpuscles had not only one outgrowth but several, which, some with and others without a stalk, were fixed to the maternal corpuscle. There were many instances in which one outgrowth was the bearer of secondary buds. Not all of these corpuscles were circular; many were irregular in form. After the spe-

cimen of blood had been kept for eight or ten days, a vacuole was formed in each of the larger corpuscles, which enlarged more and more, so that at last it was surrounded by only a thin membrane, indicated by a double contour. At this stage the development of the corpuscles had reached its end, and no further changes were observed, even in those cases—which, however, were very rare—where the blood remained suitable for examination at the end of a month.

"I proved also the conduct of the corpuscles on the addition of various fluids—such as solutions of sugar, distilled water, Pasteur's fluid, a solution of common salt, and a solution of acetic acid. These fluids, on the first day of their addition, had, notwithstanding their diversity, the same action. The corpuscles became shrivelled, and ran together into a quite irregularly formed and opaque mass, and all further development was arrested. This change occurred with the greatest rapidity on addition of solution of sugar and of Pasteur's solution.

"At a later period, say about six or eight days after the appearance of these corpuscles, shrivelling occurred on the addition of one of the above mentioned fluids, but by no means to such an extent as before. Many of the corpuscles appeared to be folded and had acquired an irregular form. Others retained their circular form, but were smaller, their contours were more distinct, and their brightness not so well marked. I have observed, however, a further development on the addition of distilled water, of an extremely diluted solution of sugar, and, in one case, of a solution of salt. In those instances the vacuoles enlarged rapidly, budding occurred, and there was also a formation of long extended processes which resembled very much the germ sacs of fungi.

"With regard to the quantity of the corpuscles in question; this varied very much; in some instances they were much scattered, in others they were very numerous. In one instance I counted on the fourth day, fifty in the field of the microscope. Whether the number of corpuscles has any relation to the existing syphilitic symptoms remains to be determined by further investigation.

"The deviations from the above described modes of development consist chiefly in a more rapid or slower development. In the first instance I found on the fourth day corpuscles which had attained almost the size of shrivelled blood-corpuscles. In cases of this kind, the corpuscles undergo the most manifold changes of form. The bud-formation was extremely unimportant. In later cases the corpuscles became distinctly perceptible for the first time on the fifth day; their growth was very slow, and when fully attained was rapidly followed by dissolution.

"Although I had at first examined the blood of many healthy men without finding any of the above described corpuscles, I still persevered in the examination, and during a period of three months, I made use of, simultaneously with specimens of blood from syphilitic subjects, specimens from healthy or at least non-syphilitic persons, and recently blood from patients affected with gonorrhœa, ulcers, and eczema. Generally the blood of syphilitic was kept in the same chamber with that of non-syphilitic persons. I have recently examined blood specimens of several patients suffering from typhus and lupus, and also one with elephantiasis græcorum.

"Now, since in no blood specimen from a non-syphilitic person, could I, notwithstanding the most careful examination, find any of the above described corpuscles, therefore must the possibility of finding these after several days' incubation in the blood of syphilitic persons, be regarded as somewhat characteristic of this disease. From this time I would give to those corpuscles the provisional name of syphilitic corpuscles.

"I have not yet carried on investigations at all times of the year, but have had occasion to remark that special attention ought to be paid to the temperature. Many of my researches were made at an indoor temperature fluctuating between 10° and 18° R., others in a place where the fluctuations of the temperature were still more considerable. In low temperatures I found that the results were negative."

Dr. Losterfer gives the details of thirteen cases of syphilis in which the blood of the patients presented the above described corpuscles.

ART. 2.—On Lomotorfer's Corpuscles.

By Prof. BESIADDECKI.

(Wiener Medizinische Wochenschrift, No. 8, 1872.)

"1. Lomotorfer's corpuscles make their appearance in the blood of syphilitic individuals at the fourth or fifth day, and at first in the non-coagulable parts of the serum slightly clouded with blood cells. They present the form of small, clear, and extremely fine nuclei, to each of which is generally attached a short and fine filament. From the fifth to the tenth days these small nuclei increase in number, and some few among them become as large as leucocytes of the blood; they are sometimes rounded in form, but more frequently irregular, shining, and active bodies, with a simple contour, and resembling very closely the protoplasm of young leucocytes. These elements remain free from color, even when the serum is stained by the coloring matter of the blood, and finally appear among the blood cells. In some rare instances small cavities with well marked bodies resembling vacuoles are met with in the interior of these corpuscles.

"2. I have met with them in this form, and in very great numbers, in a patient who for five weeks had presented a preputial induration as large as an almond, for which he had not been subjected to any internal treatment. They were also observed in the blood of a patient affected with corona veneris, who was cured by inunction; and finally in a patient aged sixteen years, who presented symptoms of congenital syphilis, that is to say, deficiency of the velum palati and of the pillars of the fauces, softening gummata on the legs, and tibial exostoses.

"3. Lomotorfer's corpuscles do not appear in equal quantities in all the specimens obtained in a single examination of the blood, and preserved in the same manner in one and the same moist chamber. They will not be developed if the drop of blood be too forcibly compressed, and if immediately afterwards the serum take up the coloring matter of the blood. They do not appear also in preparations in which the crystals of hæmato-globulin have been formed.

"4. Besides Lomotorfer's corpuscles vibriones appear sooner or later in variable quantities.

"5. In the blood of non-syphilitic individuals Lomotorfer's corpuscles may be also seen at about the seventh or eighth day, but in smaller numbers. I have observed these bodies in the blood of subjects affected with organic lesions of the heart, with rheumatism, with Addison's disease, with arthritis, with jaundice, with pneumonia, with tuberculosis, with variola, and with puerperal fever and septicæmia. They do not always develop themselves under the same conditions as in the blood of syphilitic individuals.

"6. In many preparations, numerous crystals of hæmato-globulin were produced. These were presented in the form of rhombohedral crystals, which were generally oblique, and their longest surfaces were frequently close together, so that the crystals under a low power resembled fine needles. Many crystals formed large rhomboidal masses. Those appeared in the blood both of syphilitic and non-syphilitic individuals, sometimes at certain parts of the field, at others disseminated in innumerable quantities over its whole extent. They appeared sometimes at the end of about twenty-four hours, in other instances after the specimen had been kept in a moist chamber at a temperature of 14° or 18° C.

"7. From the formation and aspect of Lomotorfer's corpuscles, it may be concluded that these corpuscles are not small drops of oil, but rather constituent parts dissolved in blood. My colleague, Prof. Stopczanski believes that they are small nuclei of para-globulin, as they resemble a precipitate of para-globulin formed by the action of carbonic acid on the serum of the blood, and again because they are considerably diminished after having been subjected to the action of oxygen. They are decomposed on the addition of a solution of common salt (one part to ten parts of water). Vibriones naturally are not thus decomposed.

"8. Further researches will doubtless show why para-globulin appears in greater abundance, or presents a more decided aspect in the blood of syphilitic individuals."

ART. 3.—*The Synovial Membranes in Pyæmia.*¹

By ROBERT HAMILTON, F.R.C.S., Surgeon to the Southern Hospital, Liverpool.

(*The Lancet*, May 25.)

After a brief account of the views at present held by the majority of writers on pyæmia as to the way in which the morbid changes found in this disease are brought about, the author dwells upon the fact of the synovial membranes being so generally attacked in pyæmia—a circumstance that has not hitherto attracted sufficient attention, though it makes it extremely probable that the first step in those forms of surgical pyæmia most commonly met with in hospital practice is to be found there. All the cases occurring at the Southern Hospital for the last thirteen years, of which particulars have been kept, had some joint affection. In some the pathological changes in the joint were slight, in others most extensive. That the disease observable in the joints begins in the synovial membrane is rendered probable from the character of the pain, and from the appearances found after death.

The poison of pyæmia, as observed in hospital practice, is *sui generis*. Whether generated in the system from a combination of constitutional and surrounding conditions, or entering as a specific germ through a wound, it is a poison having a special affinity for certain structures, and to these it passes at once. The structures are here assumed to be the synovial membranes. In what this affinity or attractiveness consists we are as yet ignorant, and can but illustrate it by what takes place in other diseases, such as the cholera poison, and the scarlatinal poison, or the producer of tetanus; whether it is a something evolved within the system, or introduced from without, it goes at once to certain nerve-tissues, and in them creates changes which set up other morbid action. Many drugs illustrate the same fact. Strychnia when swallowed, or when subcutaneously injected, has but one form of action, like the poison of tetanus—it affects nerve-tissue only. The strong analogy between pyæmia at the commencement, and acute rheumatism, has often been observed. In both there are rigors, the fever, the rapid pulse, the profuse sweating, but above all there is the pain and swelling of one or more joints. It seems probable that in both an entity has entered the system whose habitat is the joints. We cannot tell in what consists the difference of the two poisons, so that the one as a rule eventuates in recovery, and the other in a train of pathological changes whose termination is death. In both cases the tissue first affected is the synovial membrane. The abnormal action induced in it leads to an increased secretion of synovia, probably unaltered in its character and constituents in rheumatism, but of an abnormal kind in pyæmia. In the case of the synovial fluids there is in most joints a limit to its quantity; so tightly is the synovial sac compressed by surrounding tissues which are not yielding that an amount of tension quickly ensues, which leads to a forced absorption of some of the effused fluid, and then ensues in acute rheumatism, and probably as a necessary sequence, an extension of the disease to other synovial sacs, and often to the pericardium, a serous membrane, but closely allied in its nature to a synovial membrane. This augmented synovial fluid is in rheumatism a bland and innocuous fluid—a mere increase of the natural secretion; but in pyæmia it is in a decomposing state, developing rapidly germs of a lower organization; and when such a fluid has been absorbed, and in its course reaches the minute capillaries of the lungs, some of its morbid cells coagulate the fibrine of the blood there, and become arrested, and thus are formed the nuclei with which the lungs are studded,

¹ Read at a Meeting of the Royal Medical and Chirurgical Society, May 14th.

around which more fibrine is deposited, and the pathological changes follow described by Virchow and others.

In conclusion, the author states that in limiting the paper to a consideration of the fact of the synovial membranes being the tissues first affected in many forms of pyæmia, he has not lost sight of the probability of many other phases of pyæmia, having their beginnings in one or other of the serous membranes, these two membranes being so closely allied in their microscopic characters.

ART. 4.—*A Chapter in the History of Cholera.*¹

By B. G. JENKINS, of the Inner Temple.

(*Medical Times and Gazette*, May 25.)

On Friday evening, the 26th April, Mr. B. G. Jenkins, of the Inner Temple, read before the Historical Society a remarkable paper on cholera, founded on a communication to the Russian Imperial Academy of Sciences, and now in the hands of the Medical Council of the Minister of the Interior.

Mr. Jenkins maintained that no true advance could be made in any science founded on experience, and looking to facts for its development, until the facts of that science, so far as they extended, had been recorded and correctly interpreted, and that it is because we have been looking at the facts, which have been accumulating for half a century, as facts, without attempting to show—or rather, without succeeding in showing—in what relation they stand to each other, that we are really no wiser than we were forty years ago. He held that, instead of one “home” of cholera in the delta of the Ganges, there were seven, all situated on or near the tropic of Cancer, equally distant from each other, of which the most important is that at the mouth of the Ganges; that the others are to the east of China, to the north of Mecca, on the west coast of Africa, to the north of the West India Islands, to the west of Lower California, and among the Sandwich Islands; and that a reference to the map would show that the recorded appearances of cholera over the globe may be satisfactorily explained by supposing seven atmospheric streams, each 1400 miles in breadth, to proceed in a northwest direction; and that at some periods, as in 1833, 1850, and 1866, nearly all the streams were in activity.

Having pointed out the course of these streams on a map especially prepared, and shown how the disease moved within the limits of each, in both the northwest course and its southeast extension across the equator, Mr. Jenkins, in tracing in detail the course of the cholera in India during 1817 and 1818, called attention to a remarkable law which manifested itself—a law which he held to be applicable generally wherever cholera appears. Although the course of cholera during 1817 was not very clear, still it was, he believed, evident that it was northwest and southwest. The lull in virulence and advance which occurred in December, 1817, continued till March, 1818, when cholera broke out again just where it had ceased the previous December. He drew attention to a very recent similar instance: the cholera last year halted on the western border of Russia, and about a fortnight ago broke out in Poland, which augurs ill for the north of England this year. The remarkable law which manifested itself was that in 1818 the cholera advanced simultaneously in two directions—northwest and southwest—in such a manner that all places attacked at any given time by its northwest advance were situated at right angles to all the places attacked at the same time by its southwest advance. The mode of double advance was made evident by cutting a piece of paper square, placing a corner upon the map at Calcutta, and moving it across India in a direct line to Surat. In 1819 the cholera crossed the Arabian Sea to Muscat, and passed simultaneously through Persia, and up to 1823 advanced as far as Asia Minor and the Caspian, and then died out. In 1823 a

¹ Communicated by Dr. Charles Rogers, Historiographer to the Historical Society (Earl Russell, President).

fresh outbreak occurred in India; this steadily proceeded to the northwest, and halted in the west provinces of Russia in 1830, and the next year broke out in full force in the same locality—thus presenting a parallel to 1871-72—and went as far as Britain. By referring to the map he said it would be seen that all places attacked by this stream of cholera lie within the boundaries represented by two lines—one drawn from the southern point of India to the north of England, and the other from the Ganges through Orenburg to Archangel. Mr. Jenkins having described with great minuteness the rise and progress of the other six streams, bringing the subject down to the present year, stated that Europe was liable to attack from two great sources—India and Arabia—Russia and Northern (and partly Central) Europe coming under the influence of the Indian stream, Southern and Western (and partly Central) Europe under the influence of the Arabian, and that the Continent would certainly be attacked by both this year. He called attention to a fact worthy of mention, that all the places recorded by Dr. Gaven Milroy as hitherto unaffected by cholera lie outside these streams, or in their possible, but not actual, extension.

Having stated that he was prepared to give in another paper on the origin of the disease a full explanation of some well-known points about cholera, such as its partial connection with the east wind, its following the course of large rivers, its greater prevalence on tertiary strata, alluvial tracts, and the deltas of rivers, and its comparative rarity on secondary and primary strata, Mr. Jenkins proceeded as follows:—

"It was not my intention at the present time to enter into the question of the origin of the disease, but having read a few days ago that Dr. Buchanan in this very hall congratulated the meeting on being able to number among the things of the past the time when the propagation of cholera was supposed to be due to all manner of cosmic influences, and having reached 'a solid basis of fact and knowledge upon which further observation might be built with security,' I am tempted to observe that I, for one, maintained that this despised theory, which Dr. Buchanan fancies is buried and put out of sight, is the correct one. I maintain that cosmic influence lies at the origin of cholera—that cholera is intimately connected with auroral displays and solar disturbances. I believe that I am able to show that a remarkable connection exists between the maxima and minima of cholera epidemics and of solar spots; and in directing your attention to this map, on which I have represented graphically the amount of cholera and the number of sun-spots for the last fifty years, I wish to show that there is here also 'a solid basis of fact and knowledge upon which further observation might be built with security.' You are all probably aware that the great astronomer Schwabe discovered that the sun-spots have what is called a ten-year period—that is, there is a minimum of spots every ten years. It was also discovered that the diurnal variation in the amount of the declination of the magnetic needle has a ten-year period. The same was proved in regard to earth-currents and also auroral. The maxima and minima of the four were found to be contemporaneous. This was a great result; but Professor Wolf, on tabulating all the sun-spots from the year 1611, discovered that the period was not ten years but 11.11 years. This period is now the accepted one for sun-spots, and it has been established for the magnetic declination, and by Wolf for auroral. Now, it is a curious fact that the last year of every century—as 1800—has a minimum of sun-spots; so that the minima are 1800, 1811.11, 1822.22, 1833.33, etc. The maxima do not lie midway between the minima, but anticipate it, by falling on the year 4.77 after a minimum—for example, 1800 was a minimum year, then 1804.77 was a maximum year.

"Now, cholera epidemics have, I believe, a period equal to a period and a half of sun-spots. Reckoning, then, from 1800, we get as a period and a half the date 1816.66, which was shortly before the great Indian outbreak; also, 1833.33, 1849.99, 1866.66—years having a maximum of cholera; and 1883.33 as the next year in which there will be a cholera maximum. It follows from what has been already said that 1783.33 would be a year in which cholera would be at a maximum. Now, it is a fact that in April, 1783, there was a great outbreak of cholera at Hurdwar.

"I would call attention to the parallelism of increase and decrease of these curves. I am not prepared to say that sun-spots originate cholera, for they may both be the effects of some other cause, which may, indeed, be the action of the other planets upon the earth and upon the sun. If that be the case—and I see no reason why it should not—we may then have an explanation of the minor periods, and of the large period of fifty-six years, which Wolf believes he has detected, and also of the minor periods observed in cholera epidemics.

"My own opinion, derived from an investigation of the subject, is that each planet in coming to and going from perihelion—more especially about the time of the equinoxes—produces a violent action upon the sun, and has a violent sympathetic action produced within itself; internally manifested by earthquakes, externally by auroral displays and volcanic eruptions, such as that of Vesuvius at the present moment—in fact, just such an action as develops the tail of a comet when it is coming to or going from perihelion. And when two or more planets happen to be coming to or going from perihelion at the same time, and are in or nearly in the same line with the sun—being, of course, nearly in the same plane—the combined violent action produced a maximum of sun-spots, and in connection with it a maximum of cholera on the earth. The number of deaths from cholera in any year—for example, the deaths from cholera in Calcutta during the six years 1865-70—increased as the sun passed from perihelion, especially after March 21; came to a maximum when it was in aphelion; and increased again when the earth passed to perihelion, and notably after equinoctial day—thus acting as a fair test of my theory."

ART. 5.—*On Ammonia in the Urine in Health and Disease.*

By C. M. TIDY, M.B., and W. R. WOODMAN, M.D.

(*The Lancet*, June 8.)

At a meeting of the Royal Society, on May 30th (Mr. G. B. Airy, C.B., president, in the chair), Mr. T. B. Curling, F.R.S., introduced a paper "On Ammonia in the Urine in Health and Disease," by C. M. Tidy, M.B., and W. B. Woodman, M.D.

The authors differ from Neubauer regarding the average normal excretion of ammonia. They find it to be about two grains, while Neubauer gives 10.8 grains per diem. The total number of cases upon which observation were made exceeded 200. The method adopted by the authors is as follows:—

The freshly passed urine is to be first diluted with a given bulk of distilled water sufficient to destroy all apparent color, a known quantity of the urine being taken in each case. To this is to be added an excess of Nessler's solution, and then compared with the tint depth produced by known quantities of ammonia in a similar bulk of liquid, treated with the same solution. The trace of ammonia in the water itself must be always allowed for. The external temperature in the observations was always about 62°. They regard 60 oz. of urine as the normal amount daily excreted by adults.

The authors found that in health the excretion of ammonia is largest under thirty-five years of age; increased after meals and during exercise. They consider that this excretion by the kidneys is governed by a similar law to that which regulates the formation of dew.

In disease the lowest quantities were met with when the pulse was rigid, the highest average being met with when the pulse was nearly normal. The excretion was increased when the skin and tongue were moist, when the diet was full and included stimulants, and when the bowels were open. Acid medicines all increased the secretion.

A number of special diseases are alluded to. The cases taken just before death are very remarkable, showing a vast decrease in the amount of ammonia. In two cases it was entirely absent, the only cases of entire absence known to the authors.

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